INSTALLATION OPERATIONS

A SERIES OF LESSONS OUTLINED FOR THE USE OF THE SERVICE MANAGER IN INSTRUCTING BEGINNERS IN INSTALLATION WORK

No. 12—Installing Evaporator in Porcelain Lined Refrigerator

By K. M. Newcum

TOOLS NEEDED:

¼-inch steel bit, breast drill, carpenters brace, steel rule, wood chisel, screw driver, two small adjustable wrenches, and a hammer.

MATERIALS NEEDED:

Four ¼-inch galvanized carriage bolts 2½ inches long threaded 1½ inches.

Twelve ¼-inch galvanized hexagonal nuts.

Twelve ¼-inch galvanized washers.

PROCEDURE:

1. Measure ice compartment to make sure it is large enough for the evaporator.
2. Measure hanger assembly and determine the spacing for the bolts.
3. Measure and mark top of ice compartment where bolts are to be placed. Make a mark for each bolt hole.
4. Remove porcelain panel from top of ice box, over coil or ice compartment.
5. Remove the water proofed paper and boards that will be found immediately under the panel. Care must be exercised in removing the boards and other parts of the cabinet as they are to be replaced.
6. Remove insulating material and second layer of water proofed paper down to the bottom layer of wood.
7. Mark on this layer of wood where bolt holes are to be drilled. The marks should correspond with the marks on the inside of the ice compartment.
8. Insert the ¼-inch steel bit in the breast drill and drill one hole through the wood and through the porcelain lined metal top of the coil compartment. Do not apply a heavy pressure to the drill, as there is always danger of chipping the porcelain.
9. Check the location of the first hole, to see if it corresponds with the mark on the inside of the ice compartment.
10. If the first hole comes out right, drill the other three holes, as in step No. 8, check each hole after it has been drilled.
11. Install the carriage bolts through the holes.
12. Install a washer, then a nut on each bolt, and tighten the nut, drawing the head of the bolt down into the wood which will prevent it from turning.
13. Install a second nut over each bolt, then another washer. Place the hanger assembly over the bolts, installing another washer, and the final nut.
14. Place level on the evaporator and tighten and adjust the last two nuts on each bolt until the coil is rigid, plumb, and level.
15. Replace the water proofed paper, insulation material, top layer of wood, and top panel on the cabinet, and fix all back into place as you originally found it.
16. Check with instructor.

Note: Some ice boxes do not have the second layer of wood referred to in step No. 5. When this condition is found, it is advisable to make a wooden panel of ⅞-inch material of suitable size to accommodate the bolts.

Booklet Describes Uses & Advantages of Porcelain

CHICAGO—Just issued by the educational bureau of the Porcelain Enamel Institute is a new "Sales Manual for Porcelain Enamel," a 24-page booklet explaining the origin, nature, application, uses, and advantages of porcelain enamel, and telling how it may be used as a selling feature on a variety of products.

The brochure has 92 illustrations, showing the variety of uses to which porcelain has and is being put, and outlining steps in its manufacture and application. Telephone dials and neon signs, cinder catcher plates and enameled sheets for building exteriors, scales and milk tank cars, refrigerators, washers, stoves—the part which porcelain plays in all of these is explained, and its use as a selling feature stressed.

Advantages of having the exterior as well as the interior finish of a refrigerator in porcelain are outlined, and the following selling points listed for porcelain refrigerator exteriors:

1. Last as long as the user expects they should last, and longer.
2. Retain their lustre forever.
3. Retain their original color without the slightest fading.
4. Are easy to clean.
5. May be washed and scrubbed without showing signs of wear or without dulling the lustre.
6. Are always clean and presentable, even to the most fastidious.
7. Afford the lifetime finish.

For washers, kitchen equipment, stoves, and ranges, the advantages of porcelain finish in promoting cleanliness, appearance, and durability are shown and selling points listed. Availability in a variety of pastel shades is also stressed.

The newly-formed educational bureau of the P.E.I. consists of four sections—technical research, market research, promotion, and industry contact—whose purpose is to cooperate with manufacturers, distributors, dealers, and salesmen, and "to make available constructive information that will be of assistance to those interested in both the technical aspects of enameling and the sales promotion of porcelain enameled products."

Economical Assembly

ACE HARD RUBBER DOORS, RAILS, JAMBS and other parts are so well standardized in all dimensions that their use guarantees important labor economies in assembling into Display Refrigeration Equipment.

Our complete catalogue which we will send for the asking proves the simplicity with which our products may be incorporated in your structural plans.

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18 Companies Report 13,115 Commercial SALES in May

Commercial sales for May, 1935, were reported to the National Electrical Manufacturers Association (Nema) by 18 companies, some of which are not members of the association. These reports cover the sale of units less than 1 hp. in size. Companies reporting are: Baker Ice Machine Co., Brunner Mfg. Co., Carbondale Machine Corp., Carrier Engineering Corp., Crosley Radio Corp., Frigidaire Corp., General Electric Co., Gibson Electric Refrigerator Corp., Kelvinator Corp., Leonard Refrigerator Co., Norge Corp., Phoenix Ice Machine Co., Reliance Refrigerating Machine Co., Servel, Inc., Uniflow Mfg. Co., Universal Cooler Corp., Westinghouse Electric & Mfg. Co., and York Ice Machinery Corp.

Commercial	Domestic Quantity	Domestic Value
1. Water Coolers Complete	1,945	$ 195,511
2. Water Coolers Remote	99	6,573
3. Ice Cream Cabinets Complete	1,991	253,089
4. Ice Cream Cabinets Remote	904	125,286
5. Beverage Coolers Complete	3,463	251,958
6. Beverage Coolers Remote	148	13,895
Condensing Units		
7. Less than ⅛ Hp.	994	54,025
8. ⅛ to ½ Hp. Inc.	3,846	331,687
9. Above ½ and less Than 1 Hp.	876	115,638
10. Total Lines, 7, 8, and 9	**5,716**	.....
11. Total Lines 1, 3, 5, and 10	**13,115**	.....
12. Evaporators	5,474	155,093
13. Miscellaneous Cases and Cabinets	32	8,517
14. Total Commercial	.....	**$1,511,272**

Replacement Control For Copeland Units Is Built by Ranco

COLUMBUS, Ohio—Automatic Reclosing Circuit Breaker Co. has just placed on the market a new Ranco thermostat known as type KRC. This new model is an exact replacement for both the Bishop & Babcock and the Ranco type RA-12 used on the Copeland refrigerator.

The manufacturer states that it takes only a few minutes to replace the old type units with the KRC. The following instructions are given:

"Both the B & B and Ranco type RA-12 thermostats used on the Copeland refrigerator were equipped with wing nuts which provided means for adjusting the temperature range by a bracket, and a rod which extended through the coil trim had a dial pointer fastened to it. The coil trim contains the dial.

"To mount this particular style of type KRC thermostat, disconnect the adjusting bracket from both the old thermostat and the adjusting rod, and throw the bracket away. Loosen the two screws in the bulb clamp, and remove the old thermostat and throw it away.

"Insert the bulb of the type KRC in the clamp so that the thermostat is horizontal and the thermostat adjusting bracket is immediately behind the dial on the coil trim.

"Bulb and tube of the KRC have been constructed to sufficient size and strength to mount the thermostat in the proper horizontal position, above the brine tank, and furnish adequate support.

"Be sure to tighten the screws in the clamp so that the thermostat is supported rigidly by means of the thermostat bulb. Fasten the adjusting rod to the adjusting bracket on the thermostat, or merely slip the adjusting rod in the slot provided in the adjusting bracket on the thermostat, and replace the cotter key in the adjusting rod so that it may not slip forward and permit the rod to escape from the slot."

No adjustments to the thermostat need to be made when replacing the two types mentioned above, the manufacturer declares.

Installation Method

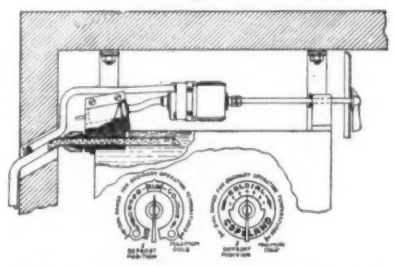
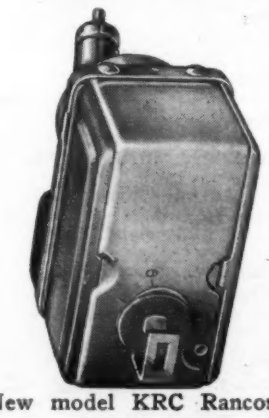


Diagram showing method of installing Ranco type KRC replacement thermostat on Copeland.

New Thermostat



New model KRC Rancostat.

222,588 Household Units SOLD in May, 1935 By 13 Firms; STOCKS Total 464,209 Units

The following 13 member companies of the Refrigeration Division of the National Electrical Manufacturers Association (Nema) reported sales for May, 1935, and household inventories for May: Apex Elec. & Mfg. Co., Crosley Radio Corp., Frigidaire Corp., General Electric Co., Gibson Electric Refrigerator Corp., Kelvinator Corp., Leonard Refrigeration Co., Norge Corp., Stewart-Warner Corp., Sunbeam Electric Mfg. Co., Uniflow Mfg. Co., Universal Cooler Corp., and Westinghouse Electric & Mfg. Co. Member companies not reporting included: Jomoco, Inc., Merchant & Evans Co., and Sparks-Withington Co. The sales of the reporting companies do, however, include units manufactured for the following concerns: Major Appliance Corp., Montgomery Ward & Co., Potter Refrigerator Corp., Sears, Roebuck & Co., and Truscon Steel Co.

HOUSEHOLD Lacquer (Exterior) Cabinets Complete	U. S. A. SALES Quantity	U. S. A. SALES Value	U. S. A. INVENTORIES Factory, Branch & Warehouse Quantity	U. S. A. INVENTORIES Factory, Branch & Warehouse Value	U. S. A. INVENTORIES Distributor Quantity	U. S. A. INVENTORIES Distributor Value
1. Chest	4,532	$ 225,126	36,627	$1,846,140	1,757	$ 86,045
2. Less than 3.00 cu. ft.	249	12,943	350	21,315	388	22,826
3. 3 to 3.99 cu. ft.	11,957	680,925	11,828	699,447	5,288	303,190
4. 4 to 4.99 cu. ft.	52,761	3,445,959	71,824	4,666,620	20,406	1,336,375
5. 5 to 5.99 cu. ft.	55,428	4,292,182	56,250	4,470,563	25,911	2,017,526
6. 6 to 6.99 cu. ft.	31,862	2,824,522	38,136	3,566,635	15,529	1,417,275
7. 7 to 7.99 cu. ft.	12,929	1,388,903	32,978	3,753,076	10,999	1,168,223
8. 8 to 9.99 cu. ft.	2,303	261,122	4,447	530,968	1,181	142,726
9. 10 to 12.99 cu. ft.	64	12,248	756	137,510	100	18,652
10. 13 cu. ft. and up	5	1,188	110	29,073	33	8,389
11. Total Lacquer	**172,090**	**13,145,118**	**253,306**	**19,721,347**	**95,664***	***7,651,189**
Porcelain (Exterior) Cabinets Complete						
12. Up to 4.99 cu. ft.	1,943	152,173	5,150	403,856	1,059	84,805
13. 5 to 5.99 cu. ft.	6,854	604,913	6,148	559,107	4,147	382,028
14. 6 to 6.99 cu. ft.	5,476	576,675	5,441	567,347	4,683	518,371
15. 7 to 7.99 cu. ft.	4,768	580,352	13,854	1,738,448	4,494	576,260
16. 8 to 9.99 cu. ft.	1,821	269,115	7,373	1,107,217	2,265	336,551
17. 10 to 12.99 cu. ft.	656	117,938	1,699	324,494	595	115,426
18. 13 cu. ft. and up	325	77,720	1,684	395,128	365	90,265
19. Total Porcelain	**21,843**	**2,378,886**	**41,349**	**5,095,597**	**24,909***	***2,870,311**
20. Total Lines 11 and 19	**193,933**	**15,524,004**	**294,655**	**24,816,944**	**120,573***	***10,521,500**
21. Separate Systems ¼ Hp. or Less	28,308	1,076,028	35,025	1,916,843	.....	.....
22. Separate Household Evaporators	347	6,916	13,767	181,265	189	4,126
23. Total Lines 20, 21, 22	**222,588**	.....	**343,447**	.....	**120,762***	.....
24. Condensing Units ¼ Hp. or Less	893	42,014	2,314	138,680	272	16,093
25. Cabinets—No Systems	105	7,827	46,242	1,684,305	36	3,444
26. Total Household	.....	**$16,656,789**	.....	**$28,738,037**	.....	***$10,545,163**

*These totals are not the sum of the breakdown figures as two companies did not report on individual items.
Note: One company did not supply figures on Factory, Branch & Warehouse Inventories. Seven companies did not supply figures on Distributors' Inventories.

Free Gifts to Buyers in 'Kelvinator Week'

ERIE, Pa.—The Winter Co., Kelvinator dealer here, recently extended its Kelvinator Week for another week. During that time each purchaser of a refrigerator received one of the following:

An electric clock, a table lamp, a 21-piece set of green glassware refrigerator dishes, an ice cube breaker, a china batter bowl and rolling pin, a china water pitcher, or a food filing system.

Plan of payment featured by the Winter Co. in its advertising is the Meter-Ator plan.

261,100 Units Sold in May By All Companies

(Concluded from Page 1, Column 5)

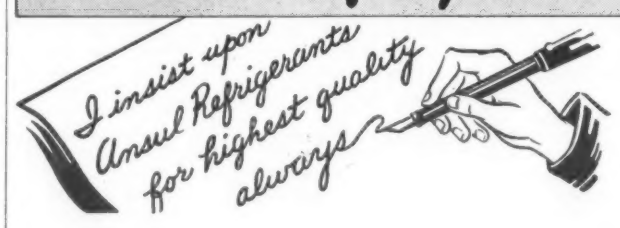
ington. Refrigeration units made by Nema members for Fairbanks-Morse, Montgomery Ward, Potter (Nema member), Sears, Roebuck, and Truscon are included in the Nema total.

Commercial condensing units sold in the United States during May totaled 13,115, including units sold separately and those sold together with low side applications. In the total are figures reported to the Commercial Refrigeration Section of Nema by 18 companies, several of which are not members. The addition of May sales brings the commercial total for the first five months to 43,552. This figure represents sales to distributors and dealers in the United States only.

The roster of companies reporting commercial sales for May includes Baker, Brunner, Carbondale, Carrier, Crosley, Frigidaire, General Elecrtic, Gibson, Kelvinator, Leonard, Norge, Phoenix, Reliance, Servel, Uniflow, Universal Cooler, Westinghouse, and York.

Nema sales to Canadian and other foreign distribution outlets have not as yet been received.

"Note to Refrigerant Buyers"



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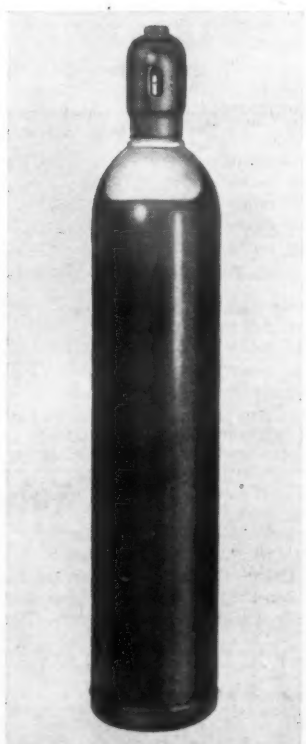

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THE NEWSPAPER OF THE INDUSTRY

ELECTRIC REFRIGERATION NEWS

WRITTEN TO BE READ ON ARRIVAL

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THREE DOLLARS PER YEAR
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Dealers Oppose GroupBuying by Large Factories

Cooperative Advertising Is Planned by Appliance Association

MILWAUKEE—Members of the Wisconsin Radio, Refrigeration, and Appliance Association have enlisted the aid of other Milwaukee trade groups and the Chamber of Commerce in a campaign to check a growing threat to retailers—the practice of group buying for employees, at below-retail prices, by large industrial concerns.

Reporting on the tendency toward joint purchasing activities in certain Milwaukee industrial plants to the last meeting of the Association, held May 26, Secretary H. L. Ashworth said the situation had reached the point where it was becoming a serious threat to legitimate retail merchandising.

As an example of the damage which a continuation of such a practice can cause, Mr. Ashworth told how one large industrial plant in the city had recently purchased 17 electric refrigerators, passing them on to employees at prices far below the regular retail selling price.

While all of the employees may not have bought a refrigerator at regular prices, this move certainly represents a loss of at least 10 retail sales, Mr. Ashworth said. Another example he cited was a request, made by the purchasing agent of a large company, for prices on 30 electric fans, to be

(*Concluded on Page 6, Column 3*)

Copeland Designs 4 New Commercials

DETROIT—Four new commercial condensing unit models have just been added by Copeland Refrigeration Corp.

Included in the models are a 2-hp. air-cooled condensing unit for fairly large size commercial applications, and three units powered by ¼, ⅓, and ½-hp. motors, respectively, for use in self-contained refrigerated display cases.

The 2-hp. machine has a 2-cylinder reciprocating, belt-driven compressor, and uses methyl chloride as the refrigerant. Bore is 2¼ in. and stroke 3 in.

Capacity of this unit with a suction pressure corresponding to an evaporator temperature of 20° F. and operating at 500 r.p.m. is 13,980 B.t.u.'s per hour.

Featuring the new compact units for self-contained display cases are

(*Concluded on Page 9, Column 1*)

Lewis & Standard Furnace Distribute Conditioners

DETROIT—Lewis Air Conditioners, Inc., of Minneapolis, and Standard Furnace & Supply Co. of Omaha, have been named exclusive distributors of Kelvinator air-conditioning equipment in their respective territories.

The Minneapolis firm has been active in the air-conditioning industry for six years, as manufacturer and wholesaler. The concern has made three expansions in factory space since it was first established, within the last year leasing 15,000 sq. ft. of additional manufacturing space.

Officers of the company are Carroll E. Lewis, president; Lawrence M. Butler, vice president; James E. Knight, secretary-treasurer; John S. Coates, sales manager; C. M. Gerber, purchasing agent; and S. C. Marshall, chief engineer.

Standard Furnace & Supply Co. has been in the heating and ventilating equipment field for the past 25 years.

Acquisition of the Kelvinator line, says W. E. Nesbit, president of the Omaha firm, will enable the company to make any kind of a modern air-conditioning installation.

Other officers of the company are Maurice Griffin, city sales manager; R. S. Quinby, provincial sales manager; and F. H. Geer, chief engineer, who recently visited the Kelvinator factory to familiarize himself with Kelvinator methods.

Dealer Chief

FIELDING C. CHANDLER
New director of General Electric's dealer division.

Warehouse Inventory Sold Out—Gibson

GREENVILLE, Mich.—"Warehouse inventory completely sold out and all orders now being shipped directly off the production line" C. J. Gibson, president of Gibson Electric Refrigerator Corp., last Thursday wired L. E. Taufenbach, Gibson sales manager who has offices in Chicago.

Gibson's sales volume for the year thus far has shown an increase of 132 per cent over last year, the president of the company reported.

Special factory promotional activities, in cooperation with dealers and distributors, has been planned for the months of July and August, Mr. Gibson declares.

Westinghouse Adds to Vining's Duties

MANSFIELD—V. E. "Sam" Vining has assumed new duties as director of department store sales for Westinghouse Electric & Mfg. Co., reports R. E. Imhoff, sales manager, merchandising division of Westinghouse.

Prior to this appointment Mr. Vining was department store supervisor for Westinghouse household refrigeration sales.

In his new job he will be responsible for the promotion and development, through department stores, of the complete line of Westinghouse products.

In addition to serving in various sales capacities with a number of manufacturers in the industry prior to joining Westinghouse about two years ago, Mr. Vining has had experience as a dealer and distributor of electrical appliances. He is the author of "Sales Idea of the Week" now appearing in weekly issues of ELECTRIC REFRIGERATION NEWS.

Norge Water Cooler Sells for $219.50

DETROIT—Norge Corp. has recently added to its line of commercial refrigeration products a new pressure-type water cooler, at a suggested list price of $219.50.

Cooling unit consists of a ¼-hp. Norge rollator condensing unit, and the motor is of the condenser type.

Temperature reduction of tap water in the cooler is such that, at 100° room temperature, 6 gal. of water per hour can be produced at 20° lower temperature, 4.5 gal. at 30°, and 3 gal. at 40°. At 100° room temperature, the inlet water temperature being 73° and the drinking water temperature 50°, 144 office employees, 60 restaurant glasses, 48 school children, or 500 theater patrons can be taken care of per hour, it is claimed.

Top and base of the unit are of gray iron casting, the former finished in black porcelain, and the latter in brown tone porcelain. The body, of heavy gauge steel, mounted on a steel frame, is finished in brown lacquer.

The cooler is 25 in. wide at the base, 21¼ in. deep at the base, and 36 in. high, less fittings. It weighs 265 lbs.

Bubbler, control, glass filler arm, and drain grille are of chromium-plated brass.

Chandler Made Manager of G-E Dealer Division

Other Changes Are Made In Specialty Appliance Department Personnel

CLEVELAND—Fielding C. Chandler has been appointed manager of the dealer division of the General Electric specialty appliance sales department, reports P. B. Zimmerman, manager.

Mr. Chandler, who succeeds A. A. Uhalt, had been assistant to Uhalt for the past three and one-half years. He has been with G-E for the past eight years, and was at one time manager of the refrigeration accessory department in the product division.

Earl H. Norling, for the past nine years engaged in salesman's training and in the merchandising of direct mail and window display material in the sales promotion division, has been made Chandler's assistant.

A new division, known as the kitchen waste unit division, has been established with M. T. Bard, formerly assistant to Commercial Manager Walter E. Landmesser, as manager. Bard will follow the experimental work on the kitchen waste unit and later organize a commercial activity.

The sales training activity with M. D. Grow in charge is being transferred from the sales promotion division to the sales division.

Lawrence Jennings, formerly of the Eastern Shore Public Service Co., joins the central station division, and will be stationed in Cleveland. W. D. McKelvey will have headquarters in Chicago as western central station manager.

128 Condensing Units In Kelvinator Line

DETROIT—Now being introduced by Kelvinator Corp. is a new line of commercial refrigerating machines, comprising in all 128 condensing units.

Kelvinator now has units in regular production employing either sulphur dioxide, methyl chloride, or Freon as the refrigerant, reports J. A. Harlan, commercial manager.

Ten standard compressor blocks, a block for every motor size, provide for the new units, which range in size from ¼ hp. to 20 hp. In capacity, this range is from 100 lbs. I.M.E. to 40,000 lbs. I.M.E. per day.

Included in the new line are gasoline driven units for installations where there are no electric power lines.

Among the principal new features of this line of commercial units, as pointed out by Mr. Harlan, are larger condensers with increased capacities, heavier bases, improved appearance, quieter operation and more flexibility in the units which have drop-forged connecting rods, bronze bearings, balanced crankshaft, balanced compressor seal, balanced compressor pulley, and refrigerant or water-cooled compressor cylinder heads.

The cylinder blocks, pistons, valve

(*Concluded on Page 9, Column 2*)

Reports of Retail Sales Indicate Effect of Local Conditions

Business in South Apparently Better; Kansas City Sales Lag; St. Louis 4-Mo. Total Up 50%; Birmingham Booms

Retail sales of household electric refrigerators, as reported recently from some cities or sections that have local associations or other agencies getting reports directly from dealers and distributors, present a widely varying picture, with totals comparing favorably for the most part with the corresponding period last year, but showing a tendency to slacken down in May and June.

Kansas City sales started off with a bang, but slumped in April and May, so that the total through May is slightly behind that through May of 1934. St. Louis sales through April were up 50 per cent, but whether that pace was maintained through May and June has not yet been determined.

Particularly encouraging is the report of the annual "Refrigeration Jubilee" campaign of the Associated Gas & Electric System, in which local dealers cooperate. Sales in this year's campaign are already 50 per cent ahead of the total for last year, with final returns not all received.

This report is encouraging because it indicates that sales in the territories served by this utility system have been good during the past 40 days, as the campaign period was from May 20 to July 6.

Retailers in Birmingham, Ala., more than quadrupled their 1934 sales for the first six months, but the June total this year was less than the total sales in May.

A report from Toledo indicates that retail sales are holding up fairly well, although a general business decline was felt starting the last of May and continuing through June.

Kansas City—10,078 vs. 12,138

Household electric refrigerator sales reported by Kansas City distributors to G. W. Weston, secretary-manager of the Electric and Radio Association of Kansas City, for the first five months of 1935, totaled 10,078 units, as compared to 12,138 refrigerators for the same period in 1934, a decrease of 17 per cent.

That 1935 sales for the first five months in Kansas City are trailing those in the similar 1934 period is explained, says Mr. Weston, by the fact that sales last spring and summer went at an unprecedented pace during the unparalled drought and heat wave which prevailed in the Kansas City area.

Sales in January, February, and March of this year were ahead of sales for the first three months of last year, Mr. Weston's figures show, but failed to keep pace with the big jumps made in April and May, 1934.

St. Louis—15,437 vs. 10,740

Sales of household electric refrigerators to users in St. Louis during the first four months of this year totaled 15,437 units, as compared to 10,740 for the same period in 1934, according to reports made by distributors to Arthur E. Schanuel, director of the St. Louis Refrigerator Bureau.

The increase in the last month (April) for which figures are given is not so large as the increases shown in the first four months, Mr. Schanuel's figures show. Sales compared by months are as follows:

January '34, 857; January '35, 2,048; February 34, 1,563; February '35, 2,300; March '34, 2,710; March '35, 5,187; April '34, 5,610; April '35, 5,902.

Total sales for the entire year 1934 were 30,166 units, according to Mr. Schanuel, so that during the first four months of this year more than 50 per cent of last year's total was obtained.

Jubilee Sales—27,131 vs. 18,071

Sales reported in the "Refrigeration Jubilee" campaign conducted by the Associated Gas & Electric System properties have already hit 27,131 units (with final returns not yet tabulated) as compared with the total of 18,071 for the campaign period last year.

While the Jubilee sales figures do not cover sales of all dealers in the territory covered by the campaign, they do represent sales of all cooperating dealers, who comprise a large percentage of the total number of retailers in these territories.

Territories covered by the report include upper New York State, parts of New England, Staten Island, N. Y.,

(*Concluded on Page 4, Column 5*)

Budget Plan Adopted By Rochester Utility

ROCHESTER, N. Y.—A new budget plan of buying electrical appliances, designed to tie in with government publicity advocating home modernization with electricity, and offering terms as long as 36 months, has been inaugurated by the Rochester Gas & Electric Co., local utility for use by dealers in the Rochester area.

The plan has as its objectives: 1) greater service to the public by increased use of appliances; 2) greater use of gas and electricity; 3) progressively lower rates, possible only through increased consumption; 4) increased purchasing power by the public, because of lower monthly payments and financing cost; 5) protection of dealers, through non-recourse

(*Concluded on Page 4, Column 4*)

Complete Conditioning Installed by Baker In Texas Hotel

WICHITA FALLS, Tex.—Visitors who throng here for the Texas Centennial celebrations here this year will enjoy air-conditioned comfort at the Kemp hotel, where one of the country's few complete hotel air-conditioning installations was completed recently by Baker Ice Machine Co.

The contract for the installation was placed with the Wichita Falls Motor Co., local distributor for Baker Ice Machine Co.

All sleeping rooms, sample rooms, coffee shop, dining room, lobby, and ballroom are comfort cooled.

In addition to furnishing complete air conditioning, the equipment also supplies circulating ice water for drinking purposes throughout the building as well as refrigeration for food preservation and refreshments.

(*Concluded on Page 7, Column 1*)

Lipman Names Dealers in Amarillo & Terre Haute

BELOIT, Wis.—Two new Lipman refrigeration equipment distributors named recently by the General Refrigeration Sales Co. of this city are Nunn Electric Co. of Amarillo, Tex., and Economy Electric Co. of Terre Haute, Ind. Joseph Cahill heads the Economy Electric Co.

Tested Merchandising Plans of Dealers Reported in Weekly Issues of 'News'

Not a week passes but that distributors and dealers somewhere are trying out a new merchandising or sales promotion idea to sell household electric refrigerators, or to ferret out a new market for commercial refrigeration.

Many of these new merchandising plans are reported in the weekly issues of ELECTRIC REFRIGERATION NEWS, not as the "brain child" of some merchandising "expert," but as ideas actually put into effect by retailers currently operating in the electric refrigeration industry.

Following is a series of references, by headlines, to stories *in this issue* dealing with a wide variety of merchandising plans and sales promotion stunts.

"Ice Dealer Takes on Electric Refrigeration and Finds Advantage in Knowing First of Users' Intentions," page 6.

"Reader Holds $5,000 Contest in Houston," page 6.

"465 Prospects Listed in Buffalo Contest," page 6.

"Salesman Waits Until 1 a. m. for Prospect, Closes Sale at 4 a. m.," page 6.

"Sales Idea of the Week," by V. E. "Sam" Vining, page 6.

"Utility Seeks to Up Minimum Bills in 'Liftop' Campaign," page 16.

"Science Classes See How Grunow Operates," page 16.

"'Spot' Broadcasts Used by Parks & Hull," page 16.

"Air-Conditioned Train Used by Marshall Field," page 7.

"G-E Equipment Sold to Firm Catering in Dog Food," page 9.

"Meters & Ball Team Boost Cooler Sales," page 9.

"Refrigerators Dehydrate Printing Rollers," page 9.

"Many Suggestions on Storing, Cooling, and Serving Beer Are Incorporated in Booklet," page 11.

"Girl Scouts Trained in Model G-E Kitchen," page 13.

PERSONALITIES

By George F. Taubeneck

S'uthe'n Gentleman

As a great many longtime readers of ELECTRIC REFRIGERATION NEWS will recall, Publisher F. M. COCKRELL scans the new crop of college graduates each year with considerable care, hoping to recruit therefrom promising material for his staff.

In previous years selections have been made chiefly from the sheepskin winners of Mr. Cockrell's school, the University of Illinois, and the Alma Mater of Business Manager GEORGE CONGDON, the University of Michigan.

Through previous well-established contacts it has been relatively simple for FMC to get a line on the Bright Young Men (and women) from each school who might fit into a publishing operation such as his. Into this office come *The Daily Illini* and *The Michigan Daily* regularly, and these worthy publications are watched carefully for signs of blossoming talent.

Last fall another school entered the lists, Duke University of Durham, North Carolina. Mr. Cockrell's daughter, Helen, chose that institution for matriculation. And so the *Duke Chronicle* began to receive interested attention around here.

It wasn't long before FMC became aware of the fact that here was a paper which was exceedingly well run, that the advertising volume was really remarkable, and that whoever was in charge seemed to have on his youthful shoulders a first-class business head. He looked in the masthead, and found that the business manager was one ROBERT NIXON.

"What can you tell me about this Nixon lad who runs the *Chronicle*?" he queried of daughter Helen, who has listened to a lot of publishing philosophy in her young life.

Back came the report: "He's a winner—a gentleman and a scholar, as well as a good business manager. I think he measures up to your specifications."

"Can you arrange for me to meet him, very casually, when we visit you for the May Day festivities?" was the next question put to Helen.

She could, and did.

Although Nixon was even then considering other offers, Mr. Cockrell (who found the Duke journalist an even better prospect than he had anticipated) was able to sell him on the idea of coming to Detroit.

Bob is here now—a clean-cut, courteous, cultured, charming lad with no end of poise, polish, and personality—and seldom has a newcomer so quickly and thoroughly impressed the entire staff. Notwithstanding his Phi Beta Kappa key, he is a slashing tennis player, a fancy high diver, a fixer of stuck windows, and a delightful dinner companion.

He seems to have plenty of stuff on the ball, and we think you all will be glad and proud, when you meet him, to welcome him into the fellowship of the refrigeration industry.

We hadn't meant to be so incidental about it, but we are also happy to report that we have hired a shining light of the University of Michigan graduating class, too—Miss JANE BASSET, who was woman's business manager of *The Michigan Daily*.

The University of Illinois had a star this year, also, a young man by the name of JOHN STROHM who was chief news editor and columnist on *The Daily Illini*. But before we could get down to see this chap, our former staff writer, ELSTON HERRON (now in charge of company publications for the Owens-Illinois Glass Co.) snatched him up to edit the paper for the Terre Haute, Ind., Owens-Illinois plant.

* * *

Hard Pants

In the July 4 issue of *Hardware Age* is an interesting 11-point "platform" listing the principles to which this trade publication dedicates its editorial efforts.

Point No. 6 says: "Hardware dealers should promote the sale of all related specialties which have a profitable market, but not to the detriment of standard backbone lines such as tools, builders hardware, house furnishings, *pants*, etc."

We assume that a backbone line of pants would be those intended for *hard wear* the kind, say, that a mechanic would need in which to carry his tools. (Note to Bro. Editor CHARLES J. HEALE: No offense intended—just a little good, clean fun).

* * *

More About the City of Brotherly Love

Last week in this space we talked at some length about the city of Philadelphia—as a market, as a place to live, and as a place to visit.

There wasn't room in that issue to finish this discussion of one of the livest markets for electrical appliances in the country today—so, if you don't mind, we'll do it right here and now.

* * *

Labor Resources

Philadelphia's industrial rating could not have been attained without sufficient and efficient labor. As far as quantity is concerned, Philadelphia and its Metropolitan Area have always enjoyed an abundant supply of labor, particularly in the skilled branches of industry.

Quality labor is something of a healthy tradition in Philadelphia. It began with the skilled craftsmen who came over with William Penn; and the tradition of pride in workmanship has been handed down, with continuing adaptations, to the industrial age.

Penn brought workers expert in all the then known trades; it is still true that every trade known to the times is represented in Philadelphia, and each has on call a plenitude of skilled workmen.

Worthy of note is the fact that Philadelphia does not have so large a foreign-born element as other industrial centers of the country. The bulk of the population is native white, with an almost negligible foreign percentage to fill out the corners.

Labor in Philadelphia is more definitely stabilized than elsewhere. Many laborers are home-owners. Reports from banking institutions show that large per cent have saving accounts. Philadelphia was the first city to develop a building and loan association, and now has within its Metropolitan Area several thousand such organizations. Everything is made simple and encouraging for the wage-earner to purchase a home out of his income. Home-owners are rarely "reds."

Educational facilities in the city are contributory to settled labor. All who wish to learn are taught—from the underprivileged child to the well-to-do adult who attends night school.

Philadelphia abounds in academies, trade schools, colleges, and universities. Illiteracy is extremely low compared with cities of equal or similar size.

* * *

Industrial Philadelphia

From the standpoint of variety of industries represented, Philadelphia is almost all-embracing.

Included in its major industries are textiles, laces, carpets, metal and metal products, paper and printing, chemical products, leather and leather goods, lumber, clay, glass, stone, refining, railroad locomotives, production tools, boxes, and tobacco.

It is probably the radio manufacturing center of the world, claiming Atwater Kent, Philco, and RCA-Victor.

Because of its fortunate hub-like location in America's most intensely developed industrial section, Philadelphia is a remarkable market for both consumer and producer goods.

Following a rather complicated method of calculation, computation, and permutation, the Philadelphia Business Progress Association finds that 185 miles is the average distance from Metropolitan Philadelphia to each dollar of spendable income in the Atlantic States.

Average distance (by the same involved mathematics) to each dollar of industrial purchases is 185 miles.

It will be readily recognized, the association points out, that 185 miles is a distance quickly covered by any means of modern transportation. And whether or not these figures are actually demonstrable, their general truth is familiar to most market analysts.

* * *

Transportation

Philadelphia was the home of the first canal in this country, and its citizens were prominent in the development of the nation's railroad system.

It now boasts "the greatest railroad in the world" (named for the state), as well as two other trunk lines and their connections. The three trunk-lines—the Pennsylvania, the Reading, and the Baltimore & Ohio—maintain more than 30,841 employees, with an annual payroll of some $60,000,000 within the city of Philadelphia.

Over these tracks are operated daily more than a thousand passenger trains, at least a hundred of which are through trains. Within the city limits are 70 passenger stations, 221 freight stations and yards, and 1,107.09 miles of track. (Boy! Do we give 'em statistics!)

The Pennsylvania Railroad Station, located at South Broad and Market Sts., is of modern Gothic design. Main building of the station has a frontage of 306 feet on Broad St. and 212 feet on Market and Filbert Sts. Fifteenth St. runs directly through it as a covered archway.

Trains enter and leave over an elevated viaduct of solid brick arches which reaches nearly five squares west to the steel bridge over the Schuylkill River.

Roof of the station covers an area of one and three-fourths acres, and is set with panes of translucent glass, so that the whole station gives the effect of a gigantic sun parlor. The main floor contains comfortable and reasonably attractive waiting rooms.

Decorating the wall facing the grand stairway is a gigantic panel showing the evolution of transportation. It was done in high stucco relief by Karl Bitter, and is worthy of close attention. The artist has attempted to embody the Spirit of Transportation in a female figure, seated in a car and taking part in a triumphal procession.

The figure, Transportation, is in the act of uniting the two hemispheres—the East, represented by an Arab, old and infirm, together with a nimble Japanese girl; the West, by a youth in Puritan dress, representing the North, and a young woman in Spanish costume typifying the Southern part of the Western hemisphere.

The chariot on which "Transportation" is seated is drawn by horses guided by America, represented by a young girl in modern costume. Leading the procession is a group of children, one carrying the model of a locomotive, another the model of a steamboat, while the youngest darts ahead with an airplane model.

Overall the group is a watchful female figure, representing American Motherhood. Following the North and South is a figure on horseback, in Spanish costume, bearing a model of the Columbus ship, "Santa Marie." An Indian and a frontiersman, with prairie schooner and ox team, bring up the rear of procession.

An immense water-color map covers the entire north wall. Fine relief work, done by the same Karl Bitter, decorates walls of the restaurant on the main floor.

Baltimore & Ohio Station is at South 24th and Chestnut Sts., a short distance east of the Schuylkill River. General architecture is in harmony with the Chestnut St. bridge which spans the Schuylkill nearby. A tall clock tower which forms a part of the building is a prominent landmark.

Appointments of this station compare with those of Pennsylvania and Reading terminals; but, like the rest, seem a bit old-fashioned.

Philadelphia & Reading Terminal, at 12th and Market Sts., has a frontage on Market St. of 266 feet and on 12th of 107 feet. It is eight stories high, faced with New England granite to the second floor, and above that with pink-tinted brick and white terra cotta.

Limited and through trains are available from Philadelphia to practically every city of importance east of the Mississippi River and in eastern Canada. Nearly 1,200 passenger trains enter or leave the city every 24 hours, or about one train every 1⅕ minutes. During rush hours, five trains may arrive at or leave one station at one time.

Two-hour express service is maintained by two of the railroads between Philadelphia and New York City, trains leaving every hour during the day on each road. Traffic between New York City and Philadelphia is the heaviest in the world over any stretch of track of similar length.

Three truck lines already mentioned place Philadelphia in direct connection with practically every point in the United States, Canada, and Mexico. Forty-nine major trading centers in the eastern half of the United States are served by through car express service out of Philadelphia.

The Port of Philadelphia is located at the head of a channel which has a mean low depth of 35 feet. Fifty-six steamship lines provide regularly scheduled service to every port of importance in the world.

Equipment for loading and unloading between ship and railroad freight car represent an investment of more than $500,000,000 in modern piers and equipment. More than 1,000 acres are

(*Concluded on Page 4, Column 1*)

Our Newest Man - - - From the South

A gentleman from Geo'gia joined the News' advertising department last week—Smiling Bob Nixon, Duke University graduate, Phi Beta Kappa, and business manager last year of the student daily down there. With him in the picture is Helen, daughter of Publisher and Mrs. F. M. Cockrell. Helen will be a sophomore at Duke next fall.

Chairman of Nema Refrigeration Division, Thomas Evans, Is Prominent Philadelphia Manufacturer

Thomas Evans, president of Merchant & Evans Co., and chairman of Nema's Refrigeration Division, looks over the News' 1935 Market Data Book. (1) "Your book this year covers just about everything." (2) "I find it most interesting and helpful." (3) "Especially this section on Nema statistics." (4) At luncheon at his club. "Hmmm, this is an interesting problem." (5) "Wonder what we can do about solving it?"

(1) "Let's see, what does he say? Oh yes, here it is . . ." (2) On refrigeration's future: "An industry is the composite of what its leaders make it." (3) "As it grows older, it must grow in strength and character." (4) "We have a great future before us . . ." (5) "If we build soundly as we go along."

"Our Sales DOUBLED when we went 100% SHELVADOR"

Radio Electric Store

14 West High Street
Phone Main 473
SPRINGFIELD, OHIO

The Crosley Radio Corporation,
Cincinnati, Ohio.

Gentlemen:

We have sold electric refrigerators for the past seven years. We, like other dealers, have learned much from our refrigerator experience. This experience has fully convinced us of the wisdom of centering our efforts on one line; a line that appeals to the widest market. We have found such a line in the Crosley Shelvador, which we have handled for the past two years.

Through the splendid cooperation of the advertising department of the Crosley Corporation in conjunction with WLW, and through special promotion plans we have been able to work out locally, an acceptance for Shelvador has been created throughout this territory, that for the first time in our sales experience with refrigeration, has resulted in real profit.

There is no question that in Springfield, no one can think of an electric refrigerator without thinking of the Shelvador. While, until the past year, we sold other refrigerators along with Shelvador, we found that our sales volume doubled this past year when we went 100% "Shelvador". More than 300 units have been sold in Springfield during the past eight months.

We do not have a large sales organization, but we do have a large "organization" of completely satisfied Shelvador owners. We cooperate with these owners in a substantial way and they cooperate with us in getting new sales. The trouble-free operation of the Shelvador is a decided asset in maintaining this cooperation. Our service department shows that the number of service calls has been cut in half since we have handled only Shelvador. We have never found it necessary to canvass for Shelvador sales. Our owners send us more prospects than we can call on.

All of this is convincing evidence of the merits, the salability, and the satisfactory performance of this remarkable refrigerator. There is no question that, both from the dealer's standpoint and the owner's standpoint, Shelvador is the most desirable and satisfactory electric refrigerator on the market today.

Sincerely yours,

THE RADIO ELECTRIC STORE

VJC-S

per V. J. Conghenour

It takes a RIFLE for big game. Specialty dealers of the widest experience agree that it is better to concentrate on one line than to scatter over several.

When you handle the Crosley Shelvador you need no other refrigerator line. Shelvador (in 3 types—Table Shelvador, Shelvador, and Tri-Shelvador) and 15 models ranging in price from $79.50 to $219.50 (delivered, installed . . . one year free service) meets every requirement from smallest home or summer cottage to largest mansions. Each group represents a distinct and unique value never before approached; each has features found nowhere else.

By buying from one source, by centering your efforts on one line, by pushing the exclusive Shelvador feature, by identifying yourself with the nation-wide Crosley Shelvador advertising campaign in dozens of national publications and over the radio . . . obviously you can go farther, make more money. The sooner you switch to 100% Shelvador, the bigger will be your year's volume.

THE CROSLEY RADIO CORPORATION - CINCINNATI

Home of *"the Nation's Station"* — WLW — 500,000 watts — most powerful in the world — 70 on your dial
POWEL CROSLEY, Jr., *President*

PERSONALITIES

(*Concluded from Page 2, Column 5*)

available for anchorage of vessels. Coast-to-coast steamship lines number seven, with approximately eight sailings each week.

Facilities for water commerce in Philadelphia include 298 wharves, 159 of which are projecting piers and 41 are water-front terminals of the three trunk-line railroads. There were 435 foreign ports served during the year 1929.

Although canals are no longer the important means of transportation they were in the earlier days, there are several that still serve as connecting links in the Philadelphia area. The Chesapeake and the Delaware canals serve to bring together a system of inland waterways that—if they were kept shipshape—would link New England with Texas.

Within the limits of the city of Philadelphia are enough paved streets and highways to form a road 16 feet wide reaching from San Diego, Calif., to Bar Harbor, Maine, if stretched diagonally across the country. (It would be pretty rough going, though, at that.)

If you want still another comparison, it would require a non-stop trip of three days and nights to traverse all the streets of Philadelphia at an average speed of 30 miles per hour.

One of the longest suspension bridges in the world is the span which connects Philadelphia with Camden (N. J.). Ferries maintained by the Pennsylvania and the Reading railroads ply (why does a ferry always "ply"?) regularly between the two cities.

Within a radius of 35 miles of Metropolitan Philadelphia are 33 airports and landing fields. Airways to the southern states and to South America are scheduled via Philadelphia. This city is one of the eastern termini for trans-continental air mail service to Chicago and the west, and is a pick-up point on the north-south air mail service between New York and Miami.

* * *

Power Resources

The Philadelphia area is the second largest manufacturing area in the eastern United States. One reason for this laudable state of affairs is accessibility of natural resources of power.

It is near the biggest coal-producing field in the country. Except for the plant which utilizes the stupendous power of Niagara, the nation's largest hydro-electric plant is located where the Conowingo Dam impounds the waters of the Susquehanna, 59 miles from Philadelphia (New Deal projects may soon obsolete this ranking).

Many transcontinental oil pipe-lines have their eastern termini in Philadelphia. From numerous points on the American continent come these great pipe-lines, bringing crude oil from the southwest and elsewhere to be refined in Philadelphia, and subsequently shipped to all parts of the globe.

Philadelphia is also favorably located with reference to gas supply.

The city itself is served mainly by two power companies, the Philadelphia Electric Co. in Pennsylvania, and the Public Service Electric & Gas Co. in New Jersey. A third company serves the area outside of Philadelphia. The lowest rate for electric power of any industrial city on the Atlantic Seaboard is enjoyed by Philadelphia—or was, at the last accounting (rates are skipping about, these troublous days).

It is the Philadelphia Electric Co. that owns the huge hydro-electric development plant known as the Conowingo Plant. The massive dam on the Susquehanna River which impounds the waters furnishing the power is of solid concrete construction, nearly nine-tenths of a mile in length. It has a deep foundation of solid rock.

From the Conowingo Dam the power is carried over two single-circuit transmission lines of 220,000 volts each to the Plymouth Meeting sub-station 15 miles from Philadelphia.

This is the largest outdoor sub-station in the world. It occupies a plot of 40 acres, and is used for dispatching current to the two other inter-connected companies and for stepping down the current for Philadelphia to 66,000 volts. The Philadelphia current is again transformed at the Westmoreland sub-station, 10 miles distant.

In addition to Philadelphia's excellent electrical facilities, the Philadelphia Electric Co. maintains a group of six steam-electric generating plants, located throughout the city and suburbs.

The Port of Philadelphia ranks second in the country in the handling of petroleum and its products. In addition to the already mentioned pipe-lines which terminate in the city, huge quantities of oil are shipped into Philadelphia by railroad tank cars and tank ships for refinement.

There are eight major oil refineries located in the Philadelphia metropolitan area, with a combined crude oil handling capacity of 8,200,000 gallons daily. One of these refining companies is the oldest petroleum exporter in the United States, having shipped its first cargo of petroleum from Point Breeze, Philadelphia, in 1861.

Valley Forge

Valley Forge, the "blood-stained footprints" of which are mentioned in every Fourth of July oration, is 23 miles from Philadelphia.

For a nominal sum—and in no great length of time—a taxi or special bus will take you to visit the intrenchments, Huntington Redoubt, Varnum's Headquarters (about the size of a dog house—giving one a rough idea of the squalor and misery in which the needy army of the Revolution spent a rigorous winter), the Defenders' Gate, the Soldiers' Hut, the Waterman Monument, the Cloister of the Colonies, the Washington Memorial Chapel (with bells donated by the various states—and with choir seats slanted so that the choristers would fall off if they went to sleep), the Valley Forge Museum, Washington's Marquee, and Washington's Headquarters.

These high spots can be glimpsed hurriedly in two hours.

Those who have more time should turn back after seeing the museum, take the left turn at Washington Lane, visit the Old School, go up the Gulph Road to the Camp Road, follow this to Washington Redoubt, go over the Inner Line Blvd., and then to Washington's Headquarters, either by the River Road or the boulevard.

There are so many interesting things to see at Valley Forge that—if a whole day is available—one should hire an automobile, and do it up right. Carriages may also be had if one can afford a more leisurely and thoughtful tour of the historic environs.

Returning to Philadelphia, you should peak into Leary's Book Store, which has done business uninterruptedly since 1836. If you peek, you'll probably browse.

The business has outgrown the original building, but descendants of the founder still own and manage the store. It is one of the most widely known shops of its kind in America, and it specializes in rare and out-of-print volumes. Location: Ninth St. below Market, opposite the Post Office.

Utility Uses Budget Financing Plan

(*Concluded from Page 1, Column 4*)

financing; 6) better relations among dealers; 7) better understanding between utility and dealers; and 8) more effective allied activity of dealers, distributors, and the utility.

Under its present setup, the plan applies only to electric and gas refrigerators, ranges, and water heaters. Aside from offering dealers and distributors greater sales opportunities, it enables home owners to increase their use of electrical appliances without an undue strain on their incomes.

For the time being, the plan will be operated on a trial basis—the length of its activity depending upon its cooperative acceptance and use. Rochester Gas & Electric, however, has set up a tentative three-year program with a quota of 25,000 electric refrigerators, 3,000 electric ranges, 2,000 electric water heaters, 1,000 gas refrigerators, 10,000 gas ranges, and 8,000 gas water heaters.

In subscribing to the budget plan, the dealer agrees to explain it fully to prospective purchasers, emphasizing that its success depends on their meeting payments promptly, to furnish former credit experience with the purchaser if no former experience furnishes basis for credit, to assist the finance company in collecting past-due payments, and to allow a 2 per cent reduction from his commission for a bad debts reserve.

The utility will train dealers' salesmen, furnish window displays, keep dealers advised on progress of the campaign, and furnish domestic science service to insure the proper use of appliances bought under the plan.

How the plan is expected to work, in increasing appliance sales, is as follows:

A customer wishes to buy a refrigerator costing $150, which, under the former payment plan, cost $10.50 down and $7.32 a month for 24 months. Under the new plan (36 months), down payment is the same, but monthly payments are dropped to $4.98, 33 per cent less than formerly.

A new electric range, priced at $150, may be bought in combination with the refrigerator for the same down payment, $10.50, and a monthly payment of $7.74, only 42 cents more than was formerly charged for the refrigerator alone.

For another 5 cents a day, an electric water heater can be purchased—so, for about 30 cents per day, the customer can have three appliances.

Working out requirements of this plan, under the supervision of Joseph Haftenkamp, vice president of Rochester Gas & Electric Co., are E. J. Kramer, secretary-manager, Rochester Electrical Association; George Doerr, Howe & Rogers, dealer; Lorin Clark of Kennedy Clark, dealer; Carl Maier, General Electric Supply Corp.; and Ivar Lundgaard of Rochester Gas & Electric Co.

Retail Sales Report Indicates Effect of Conditions Locally

(*Concluded from Page 1, Column 5*)

parts of Northwestern and Southwestern Pennsylvania, and parts of Florida, South Carolina, Kentucky, Tennessee, and Louisiana.

Latest detailed reports on the campaign give some indication on how sales are going from the geographical standpoint, with dealers and company merchandisers in the Southern territories all bettering 100 per cent of quota, Louisiana, Florida, and South Carolina districts by a considerable margin.

Upper New York State and Staten Island districts will apparently come close to making 100 per cent of quota, and the New Jersey group is over 100 per cent of quota, but the Pennsylvania and New England districts are far behind the total sales which the campaign managers thought they ought to obtain.

Birmingham—5,041 vs. 1,273

Sales of electric refrigerators in the first six months of 1935 by dealers in Birmingham, Ala., were more than 200 per cent greater than the total for the entire year of 1934.

Sales for the first half of the year were 5,041 units as compared with 1,273 for the same period last year and 2,365 for all of 1934.

Peak month so far this year was May with 1,531 installations made, June falling down to 1,012 sales.

Dealers offer a number of reasons for this phenomenal increase, among them being half-price electricity offered by the Birmingham Electric Co.; an enterprising dealer organization; more dealers in the field; close utility cooperation with the dealers and a general improvement in business. There are now 45 dealers in electric refrigerators in the Birmingham district.

A part of the increase may also be ascribed to the Birmingham Electric Co.'s sale of Liftop models, 965 having been sold since first offered April 1.

Toledo Affected by Strikes

H. G. Bogart, head of the General Electric distributorship in Toledo which bears his name, and who is also president of the Electric Club of Toledo, points out that the situation in Toledo has been abnormal due to the many strike outbreaks which have occurred this spring. Nevertheless, he declares that the entire business of his own distributorship is 42 per cent ahead of a year ago, and that he knows of a number of dealers who sold more refrigerators in the first four months of this year than they sold all last year.

There was a noticeable decline in business starting about the third week in May and running until about the third week in June, Mr. Bogart states. The weather had something to do with this, he said, but he also believes that the more or less unsettled conditions in Washington were a factor.

However, with permanent labor peace being established in Toledo Mr. Bogart says that the proportionate showing for the last half of the year will show a much greater increase than was obtained for the first half of the year.

"It is very apparent that the rural districts are in much better shape this year than for the past several years," says Mr. Bogart. "Some of our small town dealers depending almost entirely on rural business are doing a land office business."

Dawson Manages Division Of Fulton Sylphon

KNOXVILLE, Tenn.—Richard S. Dawson, formerly in charge of the Philadelphia office of the Detroit Lubricator Co., is now manager of the industrial equipment division of Fulton Sylphon Co.

Throughout years of reliable service—on refrigerators, washing machines, ironers, oil burners and air conditioners—Delco motors have established an enviable reputation for quiet operation and dependability. Household appliance manufacturers and dealers have recognized the value of Delco's Sealed Lubrication, Vulcanized Rubber Cradle Mounting and End-Play Take-Up. They know that these Delco features contribute in a large measure toward the satisfaction of the retail buyer. And this satisfaction is an important consideration in the manufacturer's choice of an electric motor.

DELCO PRODUCTS CORPORATION, DAYTON, OHIO

DELCO MOTORS

Add the FIRE TENDER

(FAMOUS AUTOMATIC COAL BURNER)

to your line

READ THIS PROPOSITION

It is what every refrigeration dealer and distributor in the country has been seeking in order to solve the seasonal slump.

and MAKE MONEY all the year around!

WHY Cut Your Sales Force This Fall? Rebuild Sales Organizations Each Spring? Not Make A Profit 12 Months Each Year?

THE ADDITION OF THE HOLCOMB & HOKE *FIRETENDER* BY REFRIGERATION DISTRIBUTORS IS PROVING A REMARKABLE SUCCESS. YOUR SALES ORGANIZATION REMAINS INTACT . . . IT CONTINUES TO SELL THE SAME PROSPECTS IT HAS BEEN SELLING. YOU ALREADY HAVE THE GOOD WILL OF CLIENTS AND SATISFIED CUSTOMERS IN YOUR TERRITORY . . . YOU HAVE THE ORGANIZATION. *SELL THEM A "FIRETENDER" TOO!* REFRIGERATION IS A SEASONAL BUSINESS. *ADD THE "FIRETENDER" AND EARN A GOOD PROFIT* FOR TWELVE MONTHS INSTEAD OF SIX OR SEVEN. MANUFACTURERS OF ELECTRICAL REFRIGERATION HAVE DEFINITELY EXPRESSED TO US A DESIRE THAT THEIR DEALERS AND DISTRIBUTORS ACQUIRE A MONEY MAKING, WINTER LINE.

The Holcomb & Hoke FIRE TENDER

The Holcomb & Hoke *FIRETENDER* is the last word in a proved complete line of fast selling, profit making automatic stokers manufactured and guaranteed by a company which has specialized for thirty-eight years in successfully manufacturing and merchandising profit making equipment. The *FIRETENDER* has proved its value in homes, apartments, hotels, hospitals, factories, stores, garages, and in every type of heating and power plant for years. The 1936 model FIRETENDER is an efficient, fuel saving, health preserving, labor eliminating and profit making stoker unexcelled in performance and sold at competitive prices. We welcome direct comparison! We can convince you that all we say of it is true.

Now Is YOUR Opportune Time

There was never, and probably never will be again, so opportune a time to take on the Fire Tender line.

It is the rapidly growing "little giant" of the merchandising field. Two to five years ago a FIRETENDER was a "piece of machinery," *TODAY IT IS AN APPLIANCE IN GREAT DEMAND* for domestic, commercial and industrial use. You, as an electrical refrigeration distributor or dealer, are in an enviable position to "dove-tail" the Holcomb & Hoke *FIRETENDER* into your sales organization and acquire a proved money making addition to your merchandising program.

Write us for complete details of our proposition. It affords a genuine opportunity for making additional profits. Leave the burden of proof to us. You will be under no obligation. We only ask for the opportunity of furnishing you with the details of a plan which enables you to straighten out your "sales curve."

- There are a number of excellent districts now open for successful progressive distributors, and some territories for dealers. Wire us *NOW*. They will not be open for many days and this is a genuine opportunity for a profitable connection.

WIRE—WRITE—OR PHONE TODAY!

ADD A WINTER MONEY MAKER TO YOUR SUMMER LINE

Holcomb & Hoke Refrigerated Cases

There is only one "**FIRETENDER.**" It has been manufactured by the Holcomb & Hoke Mfg. Co. of Indianapolis, for years as a companion product to their line of H. & H. Refrigerators and Display Cases, Grocery Boxes, Fish and Poultry Cases.

As with these cases . . . Holcomb & Hoke have built into the **FIRETENDER** all that is best; "Inner Quality" as well as exterior beauty. It gives really silent, safe and "Satisfaction Building" operation. The responsibility of the Holcomb & Hoke Mfg. Co. and its proved record for successfully merchandising quality products, the demand for and salability of its merchandise and splendid reputation for **Dealer Cooperation** is **Your Further Guarantee** of a 100% satisfactory manufacturer — dealer — distributor connection.

HOLCOMB & HOKE MFG. CO.

INDIANAPOLIS · INDIANA

465 Prospects Listed In Buffalo Contest

BUFFALO — Electric refrigerator prospects obtained from entry blanks in the recent four-week Electrical Home Modernization Contest conducted by the Electrical League of the Niagara Frontier totaled 465, declares S. S. Vineberg, manager-secretary of the league.

The main object of the activity was to develop prospects for dealers to follow up at the conclusion of the contest. Contestants had to indicate on the entry blank what electrical appliance he wanted the purchase allowance to apply on, if won.

Contestant's name and address was also listed on the entry blank. Because every entry had to be rubber stamped by a dealef, it was necessary for every contestant to visit a dealer's store.

In connection with the activity, an eight-page section of the Sunday *Buffalo Courier-Express* was devoted to electrical merchandising and promotional material.

Prizes included $250 in cash, an electric refrigerator, an electric range installed, electric ironer, console radio, electric washer, $25 purchase allowance, four electric kitchen mixers, $15 purchase allowance, $10 purchase allowance, 10 study lamps, and $5 purchase allowance.

The entry blank for this contest carried a phantom view of a one-story house surrounded by 30 individual electrical appliances. Instructions for the contest read "Connect each of 10 appliances of your own selection with a convenience outlet shown in black in the home . . . Choose the convenience outlet you would use if you lived in the home yourself. Just draw a line from the appliance to the outlet."

Salesman Waits until 1 a. m. for Prospect; Closes Sale at 4 a. m.

CHICAGO—Faint heart may never have sold a refrigerator, but patience and perseverance did for C. C. Lahey, salesman for L. V. Whitney Distributor Corp., Ice-O-Matic distributor in Chicago.

Mr. Lahey had an appointment at 8 p. m. at the residence of a prospect, Emil J. Errico. Mr. Lahey kept the appointment, Mr. Errico was not at home. The salesman, undismayed, waited until Errico's return at 1 a. m. At 4 a. m., Mr. Lahey left the house with an order and deposit on an Ice-O-Matic refrigerator and a gas range.

200 Department Stores Use Stensgaard Display

CLEVELAND—Two hundred department stores in all sections of the country are using the General Electric refrigerator window display service, developed for G-E by W. L. Stensgaard & Associates of Chicago.

These displays are installed in one store for a week and then shipped on to another store.

Ralph C. Cameron, manager of the department store division of G-E's specialty appliance sales department, believes that the service will be used in 300 stores by the year's end.

Pt. Angeles, Wash., Man To Sell Gibsons

PORT ANGELES, Wash. — New dealer for the Gibson Electric Refrigerator Corp. is Earl F. Myers of this city, who will handle the Gibson line in Clallam county.

Reader Holds $5,000 Contest in Houston

HOUSTON, Tex. — A $5,000 prize contest was recently conducted for Houstonians and other residents in this part of the state by Reader's, wholesale distributor for Crosley in Houston and vicinity.

Prizes included four 1935 Crosley electric refrigerators to be awarded outright, and bona fide credit slips amounting to $50, $25, $12.50, and $10 which were considered as cash when applied on the purchase of any new Crosley electric refrigerator.

"Just count the ice cubes" was the theme of the contest. In an advertisement run by Reader's, a refrigerator is pictured with a deluge of ice cubs overflowing the refrigerator, piling up and spreading down the page. contest rules read as follows:

"1. Just count all the ice cubes you can find in this picture. Cut out the picture and mail or take it with your answer to one of the addresses shown below.

"2. Contest closes at midnight May 31. All entries postmarked up to then will be counted.

"This Crosley contest covers the territory bounded by the following counties—North including Newton, Jasper, Tyler, Polk, Trinity, Houston, Madison, Brazos, Burleson, Lee, Fayette, Lavaca, Jackson, and Southeast Texas. It is open to everyone except employees of Crosley dealers and their families.

Winners of the four Crosley refrigerators were to have them delivered, installed, and serviced for one year by the nearest Crosley dealer.

First prize in the contest was one F-70 Crosley Tri-Shelvador, valued at $199.50; second, one FA-60 Crosley Shelvador, $159.50; third, one FA-50 Crosley Shelvador, $137.50; fourth, one FA-35 Crosley Shelvador, $104.50.

Fifth to fourteenth, 10 prizes—each a $50 certificate.

Fifteenth to thirty-fourth, 20 prizes—each a $25 certificate.

Thirty-fifth to sixty-seventh, 33 prizes—each a $12.50 certificate.

Three hundred or more prizes, each a $10 certificate.

Judges for the contest were Hymen Reader, Reader's; G. J. Palmer, Jr., *Houston Chronicle;* Jeff Barnette, Houston Chamber of Commerce, and Don Gaskins, *Houston Post.*

Houston dealers concerned in the contest were Globe Auto and Electric Co.; Main Radio Service; Hailey Tire Co.; Jackson Smith Co.; Lone Star Furniture Co.; Clayton Fleming Furniture Co.; Finger Radio and Furniture Co.; E. G. Dinsdale; J. F. Conklin; Farm and Marine Electric Service, Inc.; and Lack's Auto Supply stores.

Milwaukee Dealers Will Launch Cooperative Advertising Drive

(Concluded from Page 1, Column 1)

distributed among employees on a "cost" basis.

A similar situation arose some six years ago, and was defeated largely through an appeal by Milwaukee trade organizations to heads of the leading industrial plants. With the help of other trade groups, the Association is planning to employ similar methods in combating the present tendency.

Distributors of electric refrigerators in the Association's membership are considering a plan to enter into a cooperative campaign of advertising, designed to bring electric refrigeration and its advantages to the attention of the Milwaukee public in a united and forceful manner.

This move, sponsored by President F. W. Greusel after a study of the successful results of cooperative campaigns in other metropolitan centers, is aimed at selling the idea of electric refrigeration to the buying public, making price a secondary sales factor, and eliminating, to a large extent, the wave of price-cutting which has been harassing the Milwaukee market during the last year.

Admitting that this year's campaign will be a bit late in starting, backers of the move think it can still be a big stimulant to refrigeration sales in this area this season. Also, such a campaign would lay the groundwork for a more elaborate drive next year.

Comment was favorable to the move, but final action was delayed, pending a special distributors' meeting to definitely determine action in the matter.

Recent ruling of the Wisconsin Public Service Commission, requiring the Milwaukee Electric Railway & Light Co. to discontinue its practice of exchanging new electric light globes for old ones without cost, and covering this service in its light rates structure, gives dealers an excellent opportunity to build up a profitable neighborhood business on lamps, Mr. Greusel said.

He warned, however, against the possible attempt to introduce substandard lamps in going after business in this new field.

Sales Idea of the Week

By V. E. Vining, Director of Department Store Sales, Westinghouse Electric & Mfg. Co.

I went into a Drug Store in Los Angeles and left nine rolls of films to be developed. I took one roll from the camera as I stood talking with the clerk.

The store was connected with one of the well known downtown hotels catering to tourists. It was well located, beautifully appointed—a store to be proud of. But the clerk who waited on me lacked brains enough to ASK ME TO BUY SOME FILMS. And I didn't buy 'em.

I went into a store in San Francisco to buy shoes. When the clerk took off my shoe we both had a laugh over a hole in my sock. He sold me the shoes I came in for—but he didn't even mention socks which I obviously needed—even when I leaned against the hosiery display case while he gave me my change.

I bought 'em at a store down the street.

I went into one of the best known department stores in Chicago, and three different sales people directed me to three different floors for a department I never did find.

I went into a store in Evansville, Ind., to buy a shirt—and with it the clerk sold me a collar button. I had been wanting an extra button for years but didn't realize it until he suggested the idea.

He created business—

And added untold serenity to my family life.

Ice Dealer Takes on Electric Refrigeration and Finds Advantage in Knowing First of Users' Intentions

SULPHUR, La.—When J. Howell Johnson gets a customer, he likes to keep him. An ice dealer in this town of 1,800 people, Mr. Johnson has taken a dealership in Crosley electric refrigerators—so that his patrons needn't desert him, whatever type of refrigeration they desire.

The idea of an ice dealer selling electric refrigerators seemed little out of the ordinary to his friends, but here's how Mr. Johnson figured it:

He was in the refrigeration business, not only in the ice business—and since he was just retailing ice, not manufacturing it, his investment in that business was not very large.

Month by month, he'd noticed that some of his ice customers were changing to electric refrigeration, and he was losing them forever. Already he had lost several of them to electric refrigerator dealers in Sulphur or St. Charles, a town about 10 miles away.

If other dealers were getting these customers, he thought, he might as well become an electric refrigerator dealer and get them himself. Over a period of years, while his ice business was fading out (as it appeared to be doing), he could replace it with a new business, built on electric refrigeration.

Being in the ice business, he figured, he'd be among the first to know which of his customers were planning to switch to electric refrigeration—and so be in a position to beat other dealers to the sale. Instead of losing a customer forever, he would be gaining one, in a new field.

Instead of losing revenue, he would make a profit on the sale of an electric refrigerator—more profit than he would make by selling the customer ice for a year—and his profit would be in cash, in a lump sum.

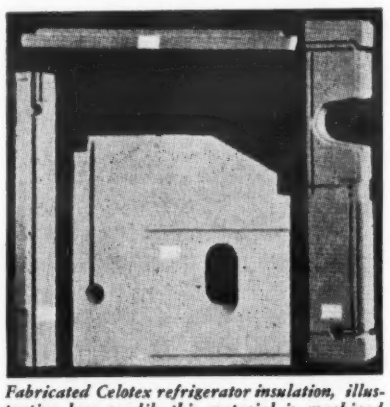
Then, as the one-year guarantee period on the refrigerators expired, he would find himself building up another profitable business—service. Over a period of years, this would bring him additional revenue, in addition to his sales of refrigerators.

After he had convinced himself of the advantages of getting his customers coming and going, Mr. Johnson (with the assistance of L. G. H. Rasch, secretary-treasurer of the Interstate Electric Co., New Orleans Crosley distributor) called on a local banker for advice—and made his first sale to the banker's daughter, on the first trip.

Within a month after taking the Crosley franchise this iceman-refrigerator dealer sold 12 electric refrigerators, two Icyballs, and two Koldrink bottle coolers. In this period, he also sold three Crosley radios.

J. Howell Johnson, ice dealer, has become the Johnson Radio & Electric Co., dealer in electric refrigeration.

INSULATE REFRIGERATORS WITH CELOTEX



Fabricated Celotex refrigerator insulation, illustrating how readily this material is machined to meet practical cabinet requirements.

A Nationally Advertised Quality Product

The public at large, and that includes prospective refrigerator buyers, is being told constantly and convincingly the important insulating advantages of Celotex.

It is therefore not only logical from the standpoint of manufacturing policy but good selling strategy to incorporate the features of Celotex in your complete line of refrigerators.

In manufacturing, Celotex offers decided savings and many advantages. It is sterilized, moisture proof, permanent, strong and rigid, and easily handled. It is available prefabricated to your own specifications with close dimension tolerances minimizing wasteful heat-leaking cracks and joints. It is sound absorbing and therefore contributes to quieter operation when used in motor compartments.

We invite consultation with our staff of refrigeration engineers. Submit specifications for estimates. Address—

THE CELOTEX COMPANY, 919 No. Michigan Ave., Chicago, Ill.

All Celotex Cane Fibre Products are Dry Rot and Termite Proofed by the exclusive Ferox Process (patented).

CELOTEX
BRAND
INSULATING CANE BOARD
Reg. U. S. Pat. Off.

BUILDS • INSULATES • DECORATES
SUBDUES NOISE

COPELAND Quality . . . IS YOUR BEST SERVICE INSURANCE

WHEN you sell the quality-built Copeland every sale becomes a closed incident. You make a permanently pleased customer. You make a generous profit unhampered by future service costs. The superiority of Copeland design, engineering and manufacturing is your best insurance that Copeland will perform faithfully, efficiently and economically for years.

- Many of the first Copeland electric refrigerators, manufactured 18 years ago, are still performing satisfactorily.
- The remarkable efficiency of the 1935 Copeland is the direct result of 18 years devoted to the exclusive manufacture of electric refrigeration.

COPELAND REFRIGERATION CORP.
Manufacturers of a Complete line of Household and Commercial Refrigeration
Holden Ave. at Lincoln . . . DETROIT, MICH.

Copeland
DEPENDABLE Electric REFRIGERATION

AIR CONDITIONING

Baker Cools Entire Texas Hotel

(*Concluded from Page 1, Column 4*)

According to James R. Shroyer, Hotel Kemp's managing director, the installation is silent, automatic, and fool-proof, and provides flexibility of operation.

The latter is accomplished by the placing of individual room coolers in each sleeping room and sample room.

Suspended cooling units with blower-type fans and variable speed motors were specified, each unit equipped with a by-pass valve in the event the room remains unoccupied.

Coffee shop, ballroom, and lobby are conditioned with an air-washing system, duct work being employed for air distribution.

The refrigerating plant proper is located in the basement and consists of a 6¼x6¼ Baker compressor cross-connected with a 4-cylinder 3½x3½ Baker compressor for auxiliary service

Four multi-unit evaporators handle the cooling load, which was arrived at by careful tests made during the hot summer months of 1934.

"We have installed the type of system which may be used for heating and air conditioning in winter as well as cooling and air conditioning in hot weather, and consider it the ideal type for hotels originally constructed without consideration for air-conditioning equipment," declares Mr. Shroyer.

Air-Conditioned Train Used by Marshall Field

CHICAGO—An 11-car, air-conditioned Baltimore & Ohio train, known as the "Merchandise Express," is making a tour of 22 cities for the wholesale department of Marshall Field & Co. here, marking a revolutionary step in merchandising practice.

Six of the 11 cars are given over entirely to displays, to which only buyers and store owners are admitted. The general public is barred. Among displays are small wares and gifts, toys and household utilities, home furnishings, apparel and lingerie, fabrics, and accessories.

Other cars on the train include diner, sleepers, an office car, and a generating unit to furnish power for lights and air conditioning. To transform the train into a traveling store, seats were removed and racks, display shelves, and counters installed.

The "Merchandise Express" is an attempt to dramatize the attractions of Chicago for out-of-town buyers, says President John McKinlay of Marshall Field & Co. He thinks it is more likely to attract more buyers to Chicago than to keep them away, waiting for the train to come again.

Rock Gives Easy Method Of Estimating Costs

CHICAGO—In building spaces having normal business or residential occupancy, air-cooling equipment will cost between $1 and $1.50 per sq. ft. of floor space to properly install, estimates William P. Rock of the Commonwealth Edison Co. air-conditioning division.

To operate this equipment during the summer for cooling will cost between 2 cents and 5 cents per sq. ft. of floor space for the season, he declares.

Two Year-'Round Units Feature Savage's Line Of Coolers

NEW YORK CITY—Leading Savage Arms Corp.'s 1935 line of air-conditioning equipment are the Zephyr 60 and Zephyr 61 all-year conditioners, the former a self-contained unit, including refrigeration, and the latter designed for optional cooling with chilled water or remote refrigeration.

Both models provide year-around air washing, humidification in winter, circulation without drafts, heating, if desired, replacing one ordinary radiator, and outdoor air supply when needed by installation before a window, with the outdoor connection panel under the sash.

Cooling and dehumidification properties are standard in Zephyr 60. In model 61, however, these properties may be included with the installation or installed at a later date. Installation of a compressor alongside the Zephyr 61 automatically converts it into a model 60.

While the Zephyr 60 is intended principally for conditioning a single room, as a private or general office or one room in a home, model 61 may, in addition, be hooked up in multiple to condition larger offices or an entire office building.

In this case, chilled water is circulated through water-cooling coils in the Zephyr units from a central refrigerating plant located in the basement; or, if water is available at temperatures under 50° F., cooling may be accomplished by a flow of the cold water through the coils, in which case the refrigerating unit is not needed.

A feature incorporated into model 60 is the water-cooled compressor motor, which permits an increase in effective cooling rating over other units of equivalent nominal horsepower rating. Motor heat is absorbed directly by the condensing water flow, the motor is held to a few degrees above cooling water temperature, thereby increasing its capacity and holding the compressor compartment to about room temperature.

Entire front panel of the unit is removable, and all valves, switches, connections, and other parts requiring inspection are easily accessible from this point. In the Zephyr 61, the entire exterior cabinet may be removed, to permit accessibility to all conditioner parts.

Both models have an air circulation capacity of 250 c.f.m., discharged from the tops of the units, and with the angle of discharge adjustable from vertical to 45°. The direction of the discharge is also variable.

All the air is purified by being passed through a dense spray. Surplus water containing impurities flows to the drain through a waste outlet located in the base of the units.

For humidification, both models will evaporate from 4 to 16 gallons of water per 24 hours' operation, the quantity depending on the temperature of the spray water, as follows:

With spray water at 60° F., 4 gal. per day; at 80° F., 8 gal. per day; at 100° F., 12 gal. per day; and at 120° F., 16 gal. per day.

The units are furnished in two capacities: with a ½-hp. condensing unit and a capacity of 7,000 to 7,500 B.t.u.'s per hour; or with a ¾-hp. compressor and a capacity of 9,000 B.t.u.'s per hour.

Heating is not included as standard equipment, since this is not required on many installations where the room or space is already provided with heating. On order, the unit will be furnished with a copper finned heating core, placed directly below the air discharge opening. Capacity of this is 10,000 B.t.u.'s per hour, or equivalent to 40 sq. ft. of cast iron radiation.

Spray water consumption is about 10 gallons per hour, on both models. The supply connection is ⅜ in. Where a large space is to be humidified, as in an entire residence, the spray water is tempered with a shell type indirect heater attached to the heating boiler.

This method is recommended wherever possible, since it automatically supplies warmer water in cold weather, when the boiler temperature is high, and cooler water in warm weather, when the boiler temperature is low, thereby providing more evaporation in cold weather and less in mild weather.

Regulation of the average temperature of water going to the units is accomplished by adjustment of one of the gate valves between the heater and the boiler.

In apartments and offices where a heating boiler is not accessible, the spray water may be tempered, if necessary in order to increase humidifying capacity, with the mixing valves which merge the hot and cold supply.

On model 60, the supply water for the condenser is from the ⅜-in. spray water supply connection. Consumption averages from 50 to 75 gal. per hour when the refrigerating unit is in operation.

The refrigerating unit on this model is composed of a 2-cylinder compressor, with a capacity of 7,000-9,000 B.t.u.'s per hour; a water-cooled condenser of the double coil type and equipment includes an automatic water valve and high pressure cut-out. The latter shuts off both the air washer and compressor in the event of a clogged drain, insuring against water damage from either condensate, condenser water, or spray water.

Both models are compact, the Zephyr 60 being 32 in. high, 50 in. wide, and 17 in deep, and the Zephyr 61, 32 in. high, 29 in. wide, and 16 in. deep.

Woman Makes 1st Sale In 'Mobilaire' Drive

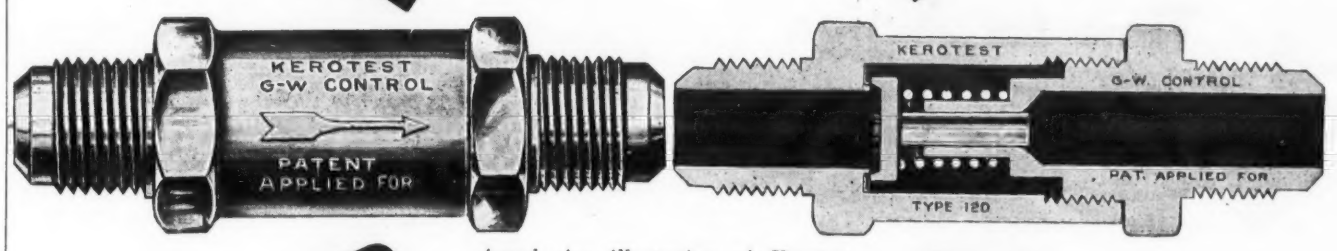
PHILADELPHIA — Miss Helyn Winans of the Eugene P. Kiehl organization here made the first sale in the contest on "Mobilaire" air conditioners conducted by Westinghouse Electric & Mfg. Co. to stimulate sales of self-contained air conditioners. The Westinghouse company has offered 24 cash prizes to winners.

Sales points used by Miss Winans in making the sale stressed the ease of installation without damage to hardwood floors, economy of operation, and a finish which harmonizes with other furnishings in the room.

Cool Nights for Texas Visitors

Suspended-type conditioners lend flexibility to the Baker Ice Machine Co. air-conditioning installation in the Kemp hotel, Wichita Falls, Texas.

KEROTEST G-W CONTROL



Actual size illustration of Kerotest Type 120 G. W. Control for ½" O. D. Tubing. Standard sizes also include ⅝" and ¾" O. D. Tubing.

★ Prevents the flow of gases in the suction line from one coil to another on multiple installations
★ Eliminates condensation of warm gas in colder coils
★ Stops frosting of the suction lines
★ Shortens running time of compressor
★ Makes positive temperature control possible
★ Pays for itself in a short time

. . . a highly developed and very sensitive suction line back pressure valve, so designed that it will not interrupt the proper return flow of oil . . . . ruggedly constructed to meet the most severe service demands of any refrigeration system such as single coil or domestic multiple installations, soda fountains, ice cream cabinets, beer coolers, etc.

Kerotest G-W Controls ARE NOT two temperature valves. The delicate bronze coil spring needs no adjustment whatsoever and is just strong enough to hold the valve seat in a closed position until incoming pressure exceeds the common line pressure.

The pressure drop through the G-W Control is very negligible and is used and recommended by leading refrigeration manufacturers.

INQUIRE ABOUT G-W CONTROL FROM YOUR NEAREST KEROTEST REPRESENTATIVE LISTED BELOW or write for descriptive literature.

KEROTEST MANUFACTURING CO. . . . PITTSBURGH, PA.

LOCAL REPRESENTATIVES
(Stocks Maintained for Immediate Delivery)

Albany, N. Y.....39 Columbia St.
Hoy & Co., Inc.
Atlanta, Ga.....285 Marietta St.
J. M. Tull Metal & Supply Co., Inc.
Baltimore, Md.....108 South St.
Clendenin Bros., Inc.
Baltimore, Md.....400 East Lombard St.
Melchior, Armstrong, Dessau Co., Inc.
Bangor, Me.
Utilities Distributors, Inc.
Boston, Mass.....145 High St.
A. E. Borden Co.
Bridgeport, Conn.....31-35 E. Washington
Parsons Brothers
Brooklyn, N. Y.....955 Third St.
Coleman Electrical Supply Co., Inc.
Buffalo, N. Y.....64 Peabody St.
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Refrigeration Equipment & Supply Co.
Chicago, Ill.....2334-38 So. Michigan Ave.
H. W. Blythe Co.
Chicago, Ill.....1228 Belmont Ave.
Max A. R. Matthews
Cincinnati, Ohio.....Burbank St.
Merkel Bros. Co.
Cincinnati, Ohio.....2118 Spring Grove Ave.
Williams & Co., Inc.
Cleveland, Ohio.....1748 E. 22nd St.
Williams & Co., Inc.
Dallas, Texas.....Jackson & Pearl Sts.
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Davenport, Iowa.....116 East First St.
Republic Electric Company
Denver, Colo.....14th at Lawrence
The Auto Equipment Co.
Des Moines, Iowa.....W. 11th & D.M.U.R.R.
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J. M. Oberc, Inc.
Fernwood, Miss.....711 N. Tangipahoa St.
Enochs Sales Co.
Greensboro, N. C.....714 W. Market St.
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F. H. Langsenkamp Co.
Kansas City Mo.....3033 Main St.
Forslund Pump & Machinery Co.
Long Beach, Calif.....1295 Gaviota St.
L. B. Marsh
Los Angeles, Calif.....3109 Beverley Blvd.
Refrigeration Service, Inc.
Macon, Ga.....131 Cotton Ave.
Lowe Electric Co.
Milwaukee, Wis.....512 N. Water St.
Chase Brass & Copper Co., Inc.
Minneapolis, Minn.....145 N. 10th St.
Chase Brass & Copper Co., Inc.
Minneapolis, Minn.....422 So. Seventh St.
Refrigeration & Industrial Supply Co., Inc.
Montreal, Que., Canada.....637 Craig St.
Railway & Engineering Specialties Ltd.
Newark, N. J.....Jefferson & Chestnut Sts.
McIntire Connector Co.
New Orleans, La.....805 Howard Ave.
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New York, N. Y.....300 Fouth Ave.
Melchior, Armstrong, Dessau Co., Inc.
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Paramount Electrical Supply Co., Inc.
New York, N. Y.....407 East 152nd St.
Aetna Supply Co.
Norfolk, Va.....767 Granby St.
Odry-Sutton Electric Co., Inc.
Oklahoma City, Okla.....100 East Main St.
Mideke Supply Company
Philadelphia, Pa.....1516 Callowhill St.
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Pittsburgh, Pa.....901 Pennsylvania Ave.
Williams & Co., Inc.
Portland, Ore.....200 No. 13th St.
Harrison Sales Co.
Providence, R. I.....156 W. Exchange St.
Rhode Island Supply & Engineering Co.
Rochester, N. Y.....91 Mt. Hope Ave.
Ontario Metal Supply, Inc.
Sacramento, Calif.....1009-1017 Front St.
J. N. Blair & Company
San Francisco, Calif.....1077 Mission St.
California Refrigerator Co.
San Francisco, Calif.....380 Brannan St.
Refrigerating & Power Specialties Co.
Seattle, Wash.....314 Ninth Ave., No.
Harrison Sales Co.
Sioux City, Iowa.....2310 E. Eighth St.
National Refrigeration Service
Springfield, Mass.....576 Main St.
Home Utilities Service Supplies Co.
St. Louis, Mo.....3337 Market St.
The Spangler Company
Syracuse, N. Y.....314 W. Fayette St.
Syracuse Supply Co.
Toronto, Ont., Canada.....82 Ontario St.
Railway & Engineering Specialties, Ltd.
Vancouver, B. C., Canada
Fleck Bros., Limited
Waterloo, Iowa
Winterbottom Supply Co.

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Buffalo, N. Y.....204 Sanders Road
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Chicago, Ill.....1342 Washington Blvd.
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Dallas, Texas.....215 So. Pearl St.
Clarence E. Boren
Dayton, Ohio.....257 Springbrook Blvd.
E. J. Kimm
Denver, Colo.....1210 California St.
Robert L. Chambers
Detroit, Mich.....18618 Santa Rosa Drive
Thomas B. McLaughlin
Los Angeles, Calif.....1015 E. Sixteenth St.
Van D. Clothier (Local Stock)
New York, N. Y.....806 Graybar Building
K. M. Newcum
San Francisco, Calif...Merchant Exchange Bldg.
A. W. V. Johnson (Local Stock)
St. Louis, Mo.....3337 Market St.
Robert H. Spangler
Waterloo, Iowa.....1127 W. 4th St.
Austin Jones

FOREIGN REPRESENTATIVES

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F. C. Lovelock, Ltd.
Europe and South America
Melchior, Armstrong, Dessau Co., Inc.
Puerto Rico
Refrigeration Supply Co.
P. O. Box 328 Puerta de Tierra, San Juan.

KEROTEST

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Time for Action

ANNOUNCEMENT of the electric refrigeration industry's unprecedented record of selling a million units during the first six months of 1935 (as reported in the July 3 issue of ELECTRIC REFRIGERATION NEWS) failed to stir the pulse of the industry so much as one might have expected.

Ordinarily one could anticipate that hanging up a mark so high would be the signal for the lighting of bonfires of celebration, for the pinning of medals, and for testimonial dinners. Not until 1933 did the industry sell a million units in a *whole year*, despite the fact that a goal of that number had been set up some years previous. To those who were in the refrigeration business four, five, and six years ago, the idea of selling a million units in just half a year would have seemed a bit fantastic.

Driving Summer Campaign

Around most of the sales organization headquarters in the industry, however, there seems little inclination to indulge in self-congratulatory dinners, or rest on the oars. Sales managers are girding themselves for a genuinely driving summer campaign. Far from being satisfied with the record of selling one million units in six months, they are out to make the second half of the year record-breaking, too. And they think they can do it. Here's why:

Despite the fact that business is obviously good, these sales managers will tell you that the refrigeration season is unusually late. Notwithstanding the statistics, they declare that large numbers of dealers and distributors haven't as yet reached their top speed this year. In explanation, they point to the "business expectations" of these dealers and distributors—which were based on study of local market conditions—as evidenced by the extraordinarily high volume of orders they placed at the beginning of the year.

Late Spring Delays Activity

Why these expectations have not yet been realized seems fairly well established. First of all, the weather. Never, say oldtime refrigeration salesmen, has spring been so disagreeable or summer so coy about coming out into the open as this year. And it seems to be a bat-your-head-against-a-brick wall fact that the real selling season for refrigeration doesn't get under way until the butter begins to melt and the milk turns sour. Second, an acute shortage of refrigerators in April and May of last year so impressed both dealers and manufacturers that this year almost everybody stooked up plentifully and early in order to avoid a repetition of that situation.

A study of the figures showing sales by manufacturers to dealers and stocks in the hands of factory branches and distributors (as published in the July 3 issue of the NEWS) does not seem to give a clear picture of the situation. The data reported by Nema member companies does not include a report of the stocks in the hands of dealers, and thus we cannot tell exactly the extent to which these million electric refrigerators have been moved into the kitchens of householders. The president of one of the larger manufacturing companies has just informed us, however, that the records of his company show that the stocks in the hands of dealers are less than at the same time last year.

Warehouse Stocks in Strong Hands

The point is made that warehouse stocks are "in the right hands," and that those in control of the stocks will be on their guard to check any movements toward dumping or wholesale price slashing. In fact, many of the larger manufacturers are guaranteeing their present prices until next winter—when their 1936 lines will be ready for presentation. Among the industry's more substantial elements the general feeling is that the season will be prolonged this summer by extra promotional and merchandising effort; and that—save for occasional lapses by scattered local dealers—no price-cutting is in sight.

To most exponents of sound thinking as applied to the industry's problems, it seems reasonable to presume that rather than cut the prices to move stagnant goods, a program of extra promotional effort this summer should produce better results at less cost to the dealer whose spring sales were handicapped by inclement weather.

These men point out that while price cuts might induce some hesitant prospects to sign on the dotted line, others will hold off in anticipation of further reductions. And price slashing does not act constructively to create further demand for electric refrigerators. Moreover, it sets new low standards in consumers' minds of the price levels at which they should be able to purchase refrigerators—levels which may be hard to raise next year.

On the other hand, an expenditure for promotion of a sum equivalent to that of the profits lost by a price cut should not only help move refrigerators out of warehouses and into the hands of hesitant prospects, but should arouse desire in the minds of people who hadn't previously been considered real prospects. In addition, such a move would permit maintenance of the present price level up to the beginning of next season, and would prevent widespread dissatisfaction among users who paid standard prices for the refrigerators during the first half of the year.

WHAT OTHERS SAY

Test of Management

THE days immediately ahead offer both a test and a golden opportunity to the management of American industry.

It now has its first chance in two years to resume its customary role as the friend and protector of labor, a role that was wrested from it by brain trusters, bureaucrats, and union organizers immediately upon the passing of the National Industrial Recovery Act.

Industrial relations have indeed been strained under NRA and the famous or infamous section 7-a which has now gone to the legal scrap heap. This section, driven through a labor lobby subservient Congress, set forth the principle that the interest of employers and employees are opposed; that they must be marshalled into opposite armed camps, the labor camp preferably under the banner of the American Federation of Labor or some other National union.

Opportunists in the fields of politics and labor seized upon this Administrative endorsement to parade the national stage in old time melodrama fashion. Bureaucracy and union labor were the heroes of the play—the champions and rescuers of fair labor, sorely pressed and harassed by the wicked villain employer.

Now management once more has its chance to resume the part that it should play and has played as the friend and champion of the workers in industry. The way to play that part effectively and convincingly is steadfastly to refuse to take advantage of the present situation and to maintain present wage rates and working hours.

If management plays its part in that way; if it now demonstrates its voluntary good will toward its workers, the cause of industrial relations will be immeasurably advanced and the philosophy of cooperation will replace the recently fostered doctrine of antagonism.

If management does not play its part in this way; if it abuses its new found liberty by cutting established wages or stretching established hours, it will be giving the cause of unionization the greatest boost that it has ever had in this country, and it will be inviting a constitutional amendment opening the way for the general regulation of hours and wages and probably of other industrial management policies and practices.—*The Iron Age.*

LETTERS

Comprehensive Work

National Refrigerator Manufacturers Association
205 West Wacker Drive, Chicago
Editor:

I have read with much interest the 1935 REFRIGERATION AND AIR CONDITIONING MARKET DATA BOOK issued by you and find it the most comprehensive work of its kind I have ever seen.

The information given is very valuable to manufacturers and they will undoubtedly take full advantage of it. You are to be commended for contributing so much of your time and money in preparing this work for the industry.

You may rely on my continued cooperation in furnishing statistics which are to be used for such a good purpose.

E. G. VAIL.

Sample Worn Out

American School
Electrical Engineering Dept.
Chicago, Ill.
Editor:

About a year ago you sent me a sample copy of the ELECTRIC REFRIGERATION NEWS, and a circular on the REFRIGERATION DIRECTORY.

That copy I used and practically wore out referring to the addresses of the manufacturers listed in it. The circular regarding the 1934 REFRIGERATION DIRECTORY was used many times to give prospective customers of the advertisers in it information as to where they could secure the products listed.

I would appreciate it if you would send me another copy of the ELECTRIC REFRIGERATION NEWS, and a circular on the REFRIGERATION DIRECTORY in order that I can take it up with the proper officials to have a copy of the latter book purchased for our use.

Our greatest use of the DIRECTORY would be to refer to the advertisers in it and direct our students as to where they could purchase the particular apparatus and repairs they needed from those manufacturers.

CARL H. DUNLAP,
Chief Engineer.

Objects to Service Listings

City Refrigeration Service, Inc.
112-14 West Austin Ave., Chicago
Editor:

First I want to compliment you on your paper the ELECTRIC REFRIGERATION NEWS, we in this office would feel the void should it cease to arrive.

Being publishers of a paper as great as this is an accomplishment requiring a great deal of gray matter. And therefore I can't understand why, with brains as the publishers of a paper of this kind must have (and I say this in all sincerity), you should select a few service contractors and list in the DIRECTORY and leave others out—why list any?

According to my observation in this section they come in droves in the spring with ruination to price and equipment, and apparently go South for the winter, leaving a curse on the legitimate contractors who really try to serve the public as well as bring the refrigeration service industry on a higher plane.

However, I don't feel that I can condemn a paper of this kind nor its publisher, because this little oversight is more than compensated by the loads of info in your weekly.

ART REQUE,
President.

Coldspot Weight Explained - - At Last

49 Pleasant St.
New Britain, Conn.
Editor:

Enclosed is money order for three dollars and ten cents ($3.10) for which please enter my subscription for one year of ELECTRIC REFRIGERATION NEWS and one copy of the March 20, 1935, issue.

I notice that the weight of the "Coldspot" as given in the issue mentioned above, does not include the weight of the unit, 112 lbs.

Local competition is using your weight figure—this of course being a little unfair to Sears, Roebuck & Co.

I would appreciate a correction on this point, either by letter or in an early issue of the NEWS.

JOHN S. SPITKO.

A Prospect!

813 French St.
Erie, Pa.
Editor:

Please send me a copy of ELECTRIC REFRIGERATION NEWS. I would like information on how to build a good refrigerator at home.

A. R. NYHOLM.

Insulated Ice Boxes

Louisiana-Mississippi Ice Association
2627 Banks St., New Orleans
Editor:

I wish to protest against the editorial appearing in the June 19 issue of your publication, entitled, "Ice Industry Shows Signs of Awakening"—particularly the statements contained in paragraph eight thereof wherein you state that "ice plants were in sympathy with the production of these cheap boxes for they used lots of ice."

As early as 1926, ice associations throughout the United States were condemning boxes with poor insulation, demanding that refrigerator manufacturers provide modern, up-to-date, well-insulated and efficient ice refrigerators for the use of ice.

About this time the Georgia Ice Manufacturers Association, representing 90 per cent of the ice manufacturers in that state, publicly refused to put their stamp of approval on any refrigerator on the market and were instrumental in securing the erection of a new refrigerator factory at Atlanta, Ga., for the manufacture of good cork-insulated refrigerators, none of which contained less than 1 in. of corkboard.

About this time the National Association of Ice Industries set up in collaboration with Columbia University a testing laboratory for refrigerators. Other organizations and associations throughout the industry for quite a few years before the ELECTRIC REFRIGERATION NEWS came into existence were doing their share in working for better refrigerators. In the past 15 years, it is a conservative statement to say that the ice industry has spent hundreds and hundreds of thousands of dollars trying to get on the market good refrigerators and trying to sell them.

You have no right to make such statements as contained in the forementioned paragraph without investigating the facts.

Your entire editorial reminds me of a boxer who meets his opponent in the middle of the ring for the first round and extends his hand as if to make a gesture of friendship but pokes his defenseless opponent on the jaw.

Leading manufacturers in your industry and leading manufacturers in our industry have worked long and hard trying to set up some ethical standards which would guide the two industries, and you do not help the situation at all by accusing the ice manufacturers of favoring and advocating policies which are equivalent to an industry attempt to swindle the American public.

WALTER F. COXE,
Secretary.

As Efficient as Government

Federal Housing Administration
Washington, D. C.
Publisher:

I am inclined to sympathize with your newly developed regulations on the elimination of a charge basis in selling your REFRIGERATION AND AIR CONDITIONING DIRECTORY AND MARKET DATA BOOK.

Since you mention that the government has always been on a cash in advance basis in connection with its own publications, it would seem that private business is beginning to achieve as much efficiency as the government.

Anyhow, all I wanted is the information, which I am taking the liberty of passing over to Mr. Speer of our Industry Division. He may take such action as he sees fit.

JOHN DEAN MILLIGAN,
Publicity Consultant to the Administrator.

Solve Air-Cooling Problems

Gorham & Kokol
Scranton, Pa.
Editor:

Your article on air conditioning by J. H. Van Alsburg was not only interesting but very educational. More articles of this kind by men of Mr. Alsburg's calibre will tend to clear up a lot of technical problems with regard to velocity and noise control.

In this article you refer to a standard 4-in. K and E anemometer. Will you kindly advise where this instrument can be purchased?

C. L. KOKOL.

Answer: We believe the K and E anemometer is made by Keuffel & Esser Co., Hoboken, N. J.

Indispensable Asset

Department of Commerce
Bureau of Foreign and Domestic Commerce
Washington, D. C.
Editor:

We find your publication most interesting and an indispensable asset to this office.

W. C. BECKER,
for Andrew W. Cruse,
Chief, Electrical Division.

"You have the best publication on refrigeration published." — L. E. Thomas, Sears, Roebuck & Co., 3715 Harrisburg Blvd., Houston, Tex.

COMMERCIAL REFRIGERATION

Copeland Designs 4 New Commercials

(*Concluded from Page 1, Column 1*)

their light weight, small area, strap steel base, and large receiver capacity (5 lbs. regular, 11 lbs. maximum), which Copeland engineers declare to be of importance with diffusion-type coils.

All three models are 21 in. long, 18 in. wide, and 18 in. high.

Model CC-25 has a 1-cylinder compressor with 2-in. bore and 1½-in. stroke. Driven by a ¼-hp. motor at 360 r.p.m. it has a capacity of 212 lbs. I.M.E. per 24 hours with an evaporator temperature of 5° F.

Model CC-33 employs a 2-cylinder compressor with 1½-in. bore and 1½-in. stroke. Driven by a ⅓-hp. motor at 440 r.p.m. it has a capacity of 335 lbs. I.M.E. per 24 hours with an evaporator temperature of 5° F.

Model CC-50 has a 2-cylinder compressor with 2-in. bore and 1½-in. stroke. With a ½-hp. motor driving it at 440 r.p.m., this unit has a capacity of 488 lbs. I.M.E. per 24 hours.

G-E Equipment Sold To Firm Catering In Dog Food

BOSTON—"Going to the dogs" is a "going" new business being conducted by the Boston branch of the Canine Catering Co., located in suburban Brookline—and incidentally opening up another field for commercial refrigeration equipment.

A General Electric CM-4 ½-hp. condensing unit, an EC-4 "conditioned-air" evaporator, and a walk-in cooler, installed by W. L. Thompson, Inc., G-E Boston distributor, are helping to make the diet from this dog delicatessen as palatable as possible to canine clients.

Canine catering is a comparatively new business. It originated in Philadelphia, and found such favor with dog owners that an affiliated company was set up here. The Boston branch serves a large dog population within a 30-mile radius of the city.

Great care is taken in planning and preparing "doggy" dishes. The catering company's "kitchen" is kept quite clean, and dog dieticians wear white jackets at all times. The food is cooked at night, and kept in the G-E cooler until delivery early the next morning.

Preparing food for canine customers isn't as easy as it may seem, says Mark Hopkins, manager of the Boston branch store. Dogs, like human beings, demand variety in their menus, and it's his job to see that they get it, their owners permitting.

Main dish consists of fresh stewed beef, chopped or ground to order, and mixed with vegetables such as cabbage, lettuce, spinach, carrots, and beets, with crumbled zwieback to furnish the roughage which, veterinarians say, is necessary to give "body" to the ration.

Once a week, if owners agree, Mr. Hopkins substitutes ox heart or liver for the beef, and he is trying to introduce a once-a-week fish menu, which he feels will be quite popular as soon as its food value is recognized.

Beef soup poured over the ration, Mr. Hopkins says, will tempt even the most fussy dog.

The food, which is sold at 17 or 18 cents a pound, is not delivered mixed. The ingredients, with the exception of the beef soup, are delivered in waxed paper packages, and the owner is permitted to mix the ration to suit himself.

Dog appetites vary with size. A terrier, Mr. Hopkins says, will seldom eat more than a half-pound, while a Great Dane will eat three or four times as much. Average "meal," he says, is about a pound and a half.

Jamaica Farmer Installs Milk Cooling Equipment

KINGSTON, Jamaica—J. Linton Watt, dairy operator, installed a Kelvinator system for cooling and storing milk and the manufacture of ice cream shortly after the Jamaica Public Service Co., Ltd., Kingston, extended its power lines into the Red Hills district, a few miles out of this city.

The system consists of a filter, aerator, milk storage cabinet, and ice cream machine, all cooled by a Kelvinator R-1150, 1½-hp. condensing unit. A brine circulating system, producing a temperature of 15° F., provides facilities for pre-cooling the milk before bottling for storage and for freezing ice cream.

Kelvinator Offers New Line of Commercial Condensing Units

(*Concluded from Page 1, Column 3*)

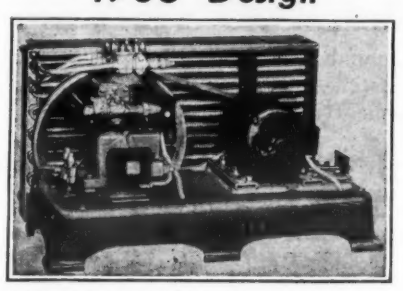
plates, cylinder heads, and compressor housings, says Mr. Harlan, are made of a fine grain, cast iron solution, especially formulated for refrigeration service.

The cylinder walls, piston pin holes, and bearings are diamond bored to provide maximum efficiency and quiet operation.

By placing both the suction and discharge valves in the cylinder head, the refrigerant gas does not enter the crankcase and oil pumping is eliminated.

Valves are of the flat, reed-type made of flexible, high-grade Swedish steel.

1935 Design



Kelvinator 1½-hp. air-cooled model in "R" block compressor design.

Refrigeration Installed In 5 Grace Line Boats

PHILADELPHIA — Mechanical refrigeration for the holds of five Grace Line fruit and passenger vessels plying between South America and the United States has been installed by York Ice Machinery Corp. Included in the installation is an air-circulation system patented by H. H. Robson of the United Fruit Co.

In all ships, each compartment is provided with two batteries of fin coils. Each battery has in addition one stack of fin coils using steam for air heating. Cooling coils employ thermostatic control valves, with hand valves as optional control on each battery.

Two fans, located amidship between the two batteries of coils in each refrigerated compartment, deliver air in thwartship direction. Air is forced through ducts in a fore and aft direction and out into the fruit spaces through outlets at the bottom of the ducts, and is returned to the blower suction on each deck.

Refrigerating equipment in three of the vessels (*Santa Barbara,*, *Santa Maria*, and *Santa Clara*) is located in the shaft tunnel directly below the fruit carrying holds. In the other two ships (the *Santa Inez* and the *Santa Rita*) equipment was installed in the starboard side of the shelter deck.

Refrigeration equipment on each ship has the capacity to furnish 70 tons of refrigeration per day, and includes two 9x7½-in. York Freon compressors, driven by 50-hp. motors and two shell-and-tube condensers.

The *Santa Barbara, Santa Maria,* and *Santa Clara* have a total banana capacity of 51,000, 51,000, and 54,000 cu. ft., respectively. The *Santa Inez* and the *Santa Rita* each have a total banana capacity of about 55,000 cu. ft.

The *Santa Lucia* is also provided with a refrigerating system for the transportation of fruit, including a hold with York air-cooling coils and the air-circulating system mentioned above.

Refrigerators Dehydrate Printing Rollers

CHICAGO—One use for electric refrigeration in the printing industry is to expel excessive moisture absorbed by rollers on small presses in the rainy sections of the country, it is reported in a recent issue of the *Inland Printer*.

The rollers, placed on supports, are inserted in any refrigerated cabinet where the temperatures are not cold enough to freeze the rollers.

It may take 24 hours to restore a set of too-moist rollers, or as long as 72 hours, but the refrigerator will absorb the excess moisture and not harm the roller, it is claimed.

The size roller to be treated is controlled by the size of the refrigerator available. Large rollers may be treated in a commercial refrigerator.

Meters & Ball Team Boost Cooler Sales

NEW YORK CITY—Two sales promotion ideas—a 25 cents a day Meter-Ator plan and a bang-up baseball team—are helping to boom beverage cooler sales for the New York branch of Kelvinator Corp.

The meter plan, aided by a trailer display manned by Salesmen Griswold Tasker and R. W. Smalley, has proved a sales stimulator in Nassau, Suffolk, Westchester, and other outlying counties in the New York area.

Formal christening of the trailer took place on the day Kelvinator's baseball team met the Sing Sing prison squad at Ossining. Two large busses carried 150 Kelvinator fans to the game.

Kelvinator, 1934 champions in the Industrial Athletic Federation League of Metropolitan New York, won the game, 13 to 9. Alabama Pitts, star Sing Sing athlete and now a member of the Albany club of the International League, was held to one scratch hit by Chester Pelilo of Kelvinator.

The water cooler trailer made the trip, too, and after the game players and spectators were served cold drinks.

McCray Equips Hotel In Plymouth, Mass.

PLYMOUTH, Mass.—The Mayflower hotel, which reopened in this historic old town on June 15, has installed $2,616 worth of McCray refrigerating equipment to safeguard the meats and vegetables it serves to its patrons.

The equipment was sold by F. M. Ingersoll and L. H. Foster of McCray's Boston branch.

The installation includes a 10x8x8-ft. vegetable cooler, a model 102 cooler, 8x8x9¼, a model 132 refrigerator, one fish case, a model W-2003 compressor, coils for the coolers mentioned, and coils for a cooler installed previously.

Zerozone's Sales Book Gives Engineering Data

DETROIT—Just brought out by Zerozone Refrigeration Co. is a new sales book giving complete data on the Zerozone commercial condensing units and some engineering information on ways to figure heat loads to determine the size of unit needed.

The book gives complete descriptions, cuts, specifications, and capacity ratings of the entire Zerozone line.

Mississippi Snagboat Equipped by Frick

NASHVILLE—A Frick refrigerating plant for cooling two storage rooms has been installed on the *Charles H. West*, new Mississippi River snagboat built by the Nashville Bridge Co. for the United States Engineers, from plans drawn by the Mississippi River Commission.

The cooling machine is a 3x3-in. two-cylinder type HA combined unit with direct current motor.

The boat has an overall length of nearly 200 ft., but is arranged for shallow draft even when loaded (4 ft. 9 in.) in view of her service in channel maintenance and snagging work. It has accommodations for a crew of 46 officers and men.

Equipped with two tandem-compound engines developing a total of 750 hp. at 22 r.p.m., the boat makes a speed of 11 statute miles. The cost of the craft is said to have been $275,000.

Other equipment includes a water filtration and distillation system, generators for electric current, oil burning boilers and galley range, a laundry, steam heating, and radio communication.

55 points OF SERVICE IN NORTH AMERICA

EXTRA DRY ESOTOO

TRADE MARK REG'D U. S. PAT. OFF.

Atlanta, Ga., J. M. Tull Metal & Supply Co., Security Warehouse Co.
Baltimore, Md., Clendenin Brothers, Inc., Davidson Transfer & Storage Co.
Billings, Mont., Midland Implement Co.
Birmingham, Ala., Harris Transfer & Warehouse Co.
Burlington, Vt., G. S. Blodgett Co., Inc.
Boston, Mass., Virginia Smelting Co.
Buffalo, N. Y., Rolls Chemical Co.
Chicago, Ill., Innis, Speiden & Co.
Charlotte, N. C., D & J Supply Co.
Cincinnati, O., Williams & Co., Inc.
Cleveland, O., Innis, Speiden & Co.
Dallas, Tex., Dallas Transfer & Terminal Warehouse Co.
Denver, Colo., Denver Fire Clay Co., The Auto Equipment Co.
Detroit, Mich., W. C. Dever, Central Detroit Warehouse Co.
El Paso, Tex., H. J. Baron Co.
Fort Wayne, Ind., H. J. Schroeder Co.
Fort Worth, Tex., Baker Ice Co.
Great Falls, Mont., Midland Implement Co.
Houston, Tex., W. B. Arbuckle, Universal Terminal Warehouse Co.
Indianapolis, Ind., F. H. Langsenkamp Co.
Jacksonville, Fla., Mead Warehouse & Dist. Co.
Kansas City, Mo., G. S. Robins & Co.
Los Angeles, Cal., Van D. Clothier.
Louisville, Ky., Harbison & Gathright, Inc.
Memphis, Tenn., United Refrigerator Service.
Miami, Fla., The Warehouse & Transfer Co.
Milwaukee, Wis., Globe Refrigerator Co.
Nashville, Tenn., Middle Tennessee Electric Co.
Montreal, Que., Canada, Bruce Ross, Ltd.
New Orleans, La., Bartlett Chemicals, Inc.
New York, N. Y., Virginia Smelting Co., National Air Conditioning Co.
Oklahoma City, Okla., G. S. Robins & Co.
Peoria, Ill., Isaac Walker Hardware Co.
Philadelphia, Pa., M & E Refrigeration Accessories Co., Merchants Warehouse Co.
Pittsburgh, Pa., Wm. M. Orr Co., Kirby Transfer & Storage Co.
Portland, Me., Galt Block Warehouse Co.
Portland, Ore., Carl F. Miller Co.
Roanoke, Va., Thurman & Boone Co.
Rochester, N. Y., Rolls Chemical Co.
Rockford, Ill., G. B. Pringey.
Salt Lake City, Utah, Denver Fire Clay Co.
San Antonio, Tex., Alamo Refrigerator Co.
San Francisco, Cal., Refrigerating & Power Specialties Co.
Seattle, Wash., C. F. Miller & Co.
Springfield, Mass., Boston & Springfield Despatch Co.
St. Louis, Mo., G. S. Robins & Co.
St. Paul, Minn., Midwest Chemical Co.
Syracuse, N. Y., Rolls Chemical Co.
Tampa, Fla., Lee Terminal & Warehouse Corp., Thurow Radio Distributors.
Toledo, O., Heat & Power Engineering Co.
Toronto, Ont., Canada, Bruce Ross, Limited.
Tyler, Tex., Walter Connolly.
Vancouver, B. C., Canada, Shanahan Chemicals, Ltd.
West Norfolk, Va., Virginia Smelting Co.
Winnipeg, Manitoba, Canada, Beaver Soap & Chemicals, Ltd.

EXTRA DRY ESOTOO—recognized as the superior refrigerant by service men everywhere—is stocked at so many convenient distribution points that prompt delivery is assured.

Its unvarying purity and dryness—due to our patented system of production—take practical form in savings of time and labor which result in increased profits.

Virginia Smelting Co.

West Norfolk Virginia

Mail this coupon NOW!

F. A. Eustis, Sec'y, Virginia Smelting Co., 131 State St., Boston, Mass. ERN-7-10-35

Send me the literature I have checked. I am interested in receiving any additional literature on Electrical Refrigeration you may issue from time to time.

☐ Folder: Extra Dry ESOTOO (Liquid Sulphur Dioxide)
☐ Folder: V-Meth-L (Virginia Methyl Chloride)
☐ Folder: Transferring from large to small cylinders
☐ Circular: Physical properties of various refrigerants

Name .....
Street & No. .....
City & State .....

COMMERCIAL REFRIGERATION

Unit Cooler Used to Cool Bottled Beer

FT. WORTH, Tex.—Novel use of a Fedders' forced-convection cooling unit is in a cabinet-type bottle beer cooler employed by a chain of barbecue stands here.

This method of cooling bottled beer by means of a Fedders model 318 "forcedraft" unit cooler and a 1-hp. York air-cooled condensing unit was developed by A. C. Rogers Co., Inc., York distributor here, for use by the popular Pig Stand chain of barbecues operating locally and in Dallas.

In addition to maintaining proper temperatures, the installations provided dry refrigeration so that the bottled beer can be served to customers with labels clean and dry. Managers of the Pig Stand chain also claim that a considerable saving in laundry bills is effected.

Ice Refrigerators Sold On FHA Loan

REEDLEY, Calif.—Ice refrigerators may now be purchased under Federal Housing Administration loan plans, FHA officials have informed ice distributors in this region, provided they are permanently secured to the building, either by connection to the drain pipes or other plumbing, or by any other system within the definitions of the Better Housing Program.

Methods of effecting "permanent" installation were demonstrated recently at the Better Housing Exposition in Los Angeles.

Rex Cole Installs G-E Equipment on Two Ocean Schooners

NEW YORK CITY—Two three-masted schooners—the *Atlantic*, tender to the *Yankee Clipper*, and the *Vema*, owned by G. Unger-Vetlesen—were recently equipped with General Electric refrigeration by the commercial department of Rex Cole, Inc., G-E distributor here.

Refrigeration equipment on board the *Atlantic* consists of one CMF-4A, ½-hp. condensing unit, which operates an FC-3 evaporator and a finned coil, located in the pantry box; one CMF-5W, 1-hp. unit, which operates an EC-17 evaporator in the galley box and an EC-15 in the vegetable box; and one CMF-5W, 1-hp. unit, for a pipe coil in the meat box.

The installation on the Schooner *Vema* includes the following:

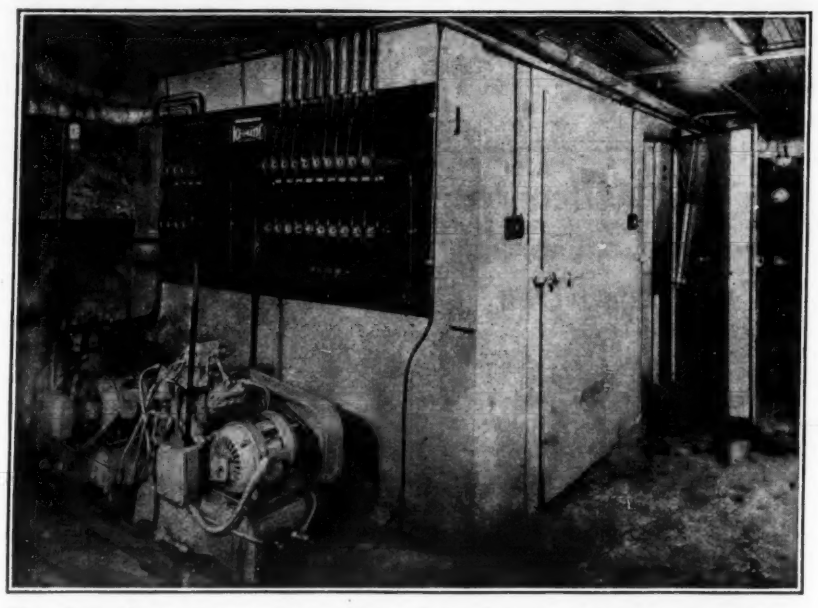
One CMF-4A, ½-hp. condensing unit, which operates three FC-6 ice makers; one CMF-5W, 1-hp. condensing unit which operates a special pipe coil to refrigerate the meat room; one CMF-8W, 5-hp. unit and two direct expansion coils for air conditioning several staterooms.

The meat room cabinet was especially constructed so that one side of it conformed with the hull of the ship, and the coils were mounted on one side of the cabinet.

Bill Hichborn of Rex Cole, Inc., supervised the construction of all cabinets and electrical and plumbing work on the *Vema*.

Matchless BEAUTY, REFRIGERATION, CONVENIENCE, SANITATION, VISION, ECONOMY.
WEBER
Refrigerator Cases & Boxes
40 STYLES, DESIGNS and SIZES to choose from!
NO SERVICE TROUBLES...Two year guarantee against "fogging"
... and other exclusive, important features that make the Weber line exceptionally profitable. Write for Distributors Plan.
Weber Showcase & Fixture Co. 5700 Avalon Blvd. Los Angeles

Neatness in the Basement, Too



The Dusenbury Bros. restaurant in Columbus is said to be one of the most beautiful in the Midwest, and the installation of Williams Ice-O-Matic commercial equipment in the basement is one of the trimmest.

* * *

Brothers Build Large Restaurant Catering To Theater Trade

COLUMBUS, Ohio—With the aid of Williams Ice-O-Matic equipment, J. W. and W. J. Dusenbury have converted an empty space in their Grand theater building into one of the most popular after-theater restaurants in the city.

After vain attempts to interest established restaurant men in the venture, the brothers Dusenbury decided to open it under their own sponsorship.

The cafe has a seating capacity of 500, and as many as 5,500 persons have been served in a day. First-floor bar, 65 ft. long, is Columbus' longest, and is said to be one of the most beautiful in the middle west. A second bar serves second-floor patrons.

The Ice-O-Matic equipment was sold and installed by the Schwartz Showell Co., Columbus distributor, and includes three compressors, one a model VW, 2-hp., 4-cylinder unit, and the other two model FW, 1½-hp., 2-cylinder units.

These cool, among other things, a four-compartment, 27-ft. walk-in cooler and barrel room in the basement, and eight lines of beer which come through from the beer-cooling room.

Schwartz Showell Co. also designed and installed the fixtures and equipment for the cafe. George Schwartz is president of the firm.

Electrolux Installed In Jersey Light Ship

BRIDGETON, N. J.—Unique refrigerator installation was made recently in the model kitchen of the Ship John Light, famous government lighthouse in Delaware Bay, 20 miles from the starting point here, when a Princess model Electrolux gas refrigerator was installed by the Bridgeton Gas Light Co., reports Jacob B. Jones, superintendent of the gas company.

William B. Harwood, assisted by Paul Birch, representing the Bridgeton Gas Light Co., and Edward Paxton of the C. W. Richards Co., delivered and installed the refrigerator. Delivery was made by truck from Bridgeton to Greenwich Piers, loaded on a launch, and conveyed to the lighthouse.

Upon arrival, it was necessary to raise it 60 feet by means of a derrick to be swung aboard the landing stage. Hopane gas equipment and bottles of stored gas to furnish fuel for operation were also delivered.

Historical note in regard to the Ship John Light is as follows:

"The Ship John sank near the ship channel in Delaware Bay on a dangerous shoal, some three miles distant from the Cohansey Light, in the winter of 1797. Following the disaster, a wooden lighthouse was built to mark the shoal, but the exact date is not known. In 1876, however, this wooden structure was destroyed by ice, and the present lighthouse was built of steel. This steel type of lighthouse was publicly exhibited in Philadelphia during the Centennial of that year."

The lighthouse, oldest in operation in the district, is 65 ft. from the water to the top. It is a steel cylinder, sunk 30 ft. below the surface of the water and filled with rock.

The roof of the structure is made of copper, constructed to catch all of the rain water, which is conveyed by pipes to large tanks at the bottom, where it is stored for use of the keepers.

There are two men on duty all the time, the men working 22 days in succession each month, with eight days shore leave. The light is never left alone during operating hours. Power is furnished by two Delco systems.

Bender Named District Manager for Lipman

BELOIT, Wis.—H. E. Bender has been appointed district manager in Michigan, Indiana, Wisconsin, and parts of Pennsylvania and Illinois for the General Refrigeration Sales Co., manufacturer of Lipman equipment.

He succeeds F. M. Angus, who is now manager of the Cleveland branch of the company. Bender has handled Lipman equipment for the last 15 years as distributor, service man, and salesman. He was formerly Lipman distributor in Denver, and more recently was connected with the manufacturer's branch office in Kansas City.

Department Stores Up Refrigerator Advertising

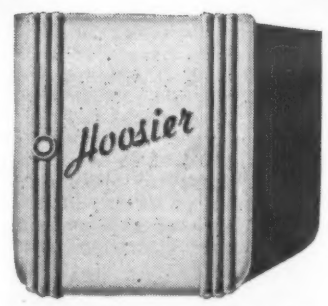
NEW YORK CITY—Report of 19 departments in New York City and Brooklyn department stores shows an increase during April in the use of advertising lineage in electric refrigeration, according to a breakdown on local advertising figures issued recently by Media Records, Inc.

According to the figures, electric refrigeration lineage totalled 36 974 lines in April, 1935, including four Sundays, as against 21,947 lines in April, 1934, with five Sundays included.

Copeland Dealer Sells 17 Units to Apartment

DETROIT—Republic Refrigeration Co., local dealer for Copeland electric refrigeration, has just completed installation of 17 household units in the Fernwood apartments here.

Smart, Attractive INTERIORS Sell Refrigerators



EVAPORATOR DOORS, VEGETABLE FRESHENER and SERVICE DRAWER FRONTS

In our newly developed finishes of Special Alloy Aluminum

ICE CUBE and DESSERT TRAYS
VEGETABLE FRESHENERS
STORAGE PANS

HOOSIER
LAMP & STAMPING CORP.
EVANSVILLE...INDIANA

Frigidaire-Temprite Used by Swank Bar

CHICAGO—A special Frigidaire-refrigerated Brunswick bar has been installed in Martin's, Inc., air-conditioned bar room located in the American Bank building here, reports A. J. Mullowney of the Brunswick-Balke-Collender Co.

The 45-ft. bar is equipped with a 36-in. tapping station using two 50B3 Temprite tap mechanically refrigerated beer coolers and one 30B1 undercounter Temprite tap mechanically refrigerated water cooler.

The back bar, 31 ft. in length, includes two 6-ft. mechanically refrigerated sections. Immediately in back of the bar in a room designed for the purpose is an 8x12x7-ft. mechanically refrigerated walk-in cooler, providing for storage and pre-cooling of 15 barrels or 24 half barrels of beer.

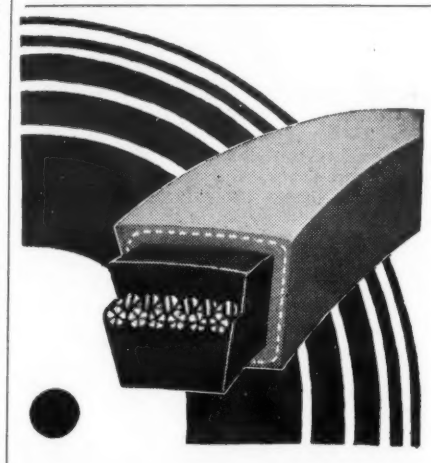
A Frigidaire, model 1G6, 1½-hp. water-cooled compressor furnishes refrigeration for the beer-cooling units, back bar, and walk-in cooler.

Giant Ice Cream Cabinet Employs Frigidaire Unit

BALTIMORE—Said to be the largest cabinet of its kind in use for storage of packaged ice cream in this city, a Frigidaire ice cream storage cabinet has been installed by Gold Medal Ice Cream & Candy Co.

The cabinet was especially constructed for the concern by Robbins & Burke, Inc., Cambridge, Mass., manufacturer of refrigerated truck bodies and cabinets. It was installed by F. A. Davis & Sons, Inc., distributor for Frigidaire commercial equipment.

The unit is operated by a ¾-hp. Frigidaire motor. The cabinet has a storage capacity of 700 dozen five-cent packages of ice cream.



HIGH RESISTANCE TO SIDE WEAR

MANHATTAN V-BELTS

have attained a high degree of permanent resistance to side wear. A specially woven fabric and an exclusive friction compound have reduced side wear to the lowest minimum attained in our many years of V-Belt manufacturing experience . . . Manhattan V-Belts for Fractional Horsepower Service have flexibility and strength. Our endless whipcord construction has distinct advantages over other V-Belts. Long life and assured economy of operation have made Manhattan the choice of leading manufacturers . . . To eliminate noise—specify Manhattan.

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Birmingham Cleveland New Orleans
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Chicago Minneapolis Philadelphia
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THE MANHATTAN RUBBER MFG. DIVISION of Raybestos-Manhattan, Inc.
Executive Offices and Factories
45 TOWNSEND ST., PASSAIC, N. J.

From Refrigerator Car into Produce Storage Room

One of the two storage rooms in the renovated refrigerator car, showing the Fedders forced convection cooling units. At the right is the Westinghouse condensing unit, which is installed in another building.

* * *

Produce Firm Makes Railroad Car into Storage Rooms

MANSFIELD—City Produce & Commission Co. here, needing a carload of refrigeration space, conceived the idea of buying an obsolete ice type refrigerator car from the railroad. They bought one at a bargain and parked it on their siding.

A Westinghouse sales engineer was called in to convert the car into an electrically refrigerated storage room.

Westinghouse installed a CWF-3002 3-hp. water-cooled condensing unit and four Fedders model 318 forcedraft unit coolers. The car was already insulated with 5 inches of cork.

The car is divided into two storage rooms—each opening on a lateral passageway running across between the two regular refrigerator car doors.

Condensing unit is installed in the basement of an adjoining building, the refrigerant lines being run outside to the Fedders unit coolers.

The result of this installation is a refrigerator approximately 40 ft. long. The City Produce & Commission Co. saved money and inside floor space, and at the same time provided an accessible location for trucks to load without a long carry.

Davidson Joins Russ Sales & Designing Staff

CLEVELAND—George L. Davidson has been appointed to the Russ sales and designing staff. Formerly Mr. Davidson was in charge of sales of the Wilmarth line of drug store fixtures in the Grand Rapids Store Equipment Co.

Mr. Davidson will work with Marcy Miller.

Many Suggestions on Storing, Cooling & Serving Beer Are Incorporated in Booklet

CLEVELAND—With the hope of eliminating a big number of beer complaints, the Russ Co. and the General Electric Co. are cooperating in sponsoring an educational campaign directed to beer dispensers, and supervised by C. D. Heiser, sales promotion manager of the Russ Co. Heart of the campaign is a 24-page booklet "How to Draw a Good Glass of Beer," done in rotogravure.

It is claimed that 90 per cent of all beer complaints are due to lack of knowledge or carelessness on the part of beer dispensers, Mr. Heiser states in explaining the campaign.

As developed by engineers of the two companies, the plan provides first for meetings of the brewery's own sales organization, distributors and their salesmen; and second for group meetings of the brewery's customers and prospective customers.

At these meetings, representatives of Russ and General Electric demonstrate with actual equipment, some of the things to do and the things not to do in the proper dispensing of beer. Sound picture films of harmful and correct beer dispensing practices under actual conditions are shown, as well.

Breweries in all sections of the country have spent millions of dollars in the rehabilitation of their plants since the end of prohibition and countless thousands of dollars have been appropriated to tell the public that the best beer in the world is brewed in America, points out Mr. Heiser, but all of this means nothing if the beer reaches the customer's glass without the original brewed-in flavor and tang, Russ people point out. Men who knew nothing of the beer dispensing business, obtained a license and opened up. It was natural that these people would not know all of the best methods of beer dispensing. So the alert brewer today realizes that he must brew good beer and see that it reaches the customer's glass in good condition, as well.

"Brewers everywhere during the past two years have had complaints of wild, flat, sour, or tasteless beer," states Mr. Heiser.

"They know that when the beer leaves their loading platforms it is good because they have spent thousands of dollars and employed the best help to insure a uniformly fine taste and quality. The fault lies with incorrect storage or serving in the retailer's place of business."

For the past year and a half, G-E has worked with Russ upon a searching study of the brewing industry to determine the most common causes for dissatisfaction upon the part of the average retailer. Beer service under all conditions was studied for adverse effects upon the brew and the final figures undeniably proved that more than 90 per cent of all beer complaints were due to lack of knowledge or to carelessness on the part of the dispensers. This fact established the basis upon which has been built the Russ G-E dealer educational campaign.

Programs have been planned, discussion outlined, talking slide films produced, literature printed and demonstration equipment has been made available in an effort to provide producers with an effective weapon to combat unjust criticism resulting from dispensing ignorance.

The two slide films explain in an interesting common sense manner the unusual evils of beer service. The onlooker is taken, by the pictorial route, back of bars where dirt and contamination are evident; to establishments where cleanliness is a business-building asset; into overheated basements where cooperage cracks and where beer spoils; inside the correctly temperatured pre-cooler and many other places where the camera has blinked a retentive eye upon actual dispensing conditions.

Covered also is the story of how beer is made and how the average brewer has spared no costs in bringing to the retailer a product that is right in every respect.

The causes of wild and flat beer are thoroughly explained and ways pointed out to the dispenser for the correction of the "don'ts" in his service system.

The showing of these films is keyed for a spot on every educational get-together. Tests have shown that arrangements should be made to include no more than 75 to 100 retailers at each meeting until all of the brewer's accounts have been accommodated. The showing also paves the way for the distribution of the powerful 24-page educational piece, "How to draw a good glass of beer." This book tells an interesting and instructive story in pictures on how to draw beer.

During the course of the meeting an actual demonstration, using portable tapping and dispensing equipment made available for the purpose, is performed to show the right way to tap and serve beer. Talks are given by trained specialists.

Some of the suggestions in "How to Draw a Good Glass of Beer" include the following:

"When you get a delivery of draft beer from the brewery, never place the kegs near the furnace or in any warm room.

"Never tap the keg immediately upon receipt. Moving around and possibly rough handling has agitated the beer and it should be allowed to settle for at least a few hours.

"Breweries don't make wild beer. But warm temperatures do, unless the keg pressure and beer temperature is accurately controlled. Construct a pre-cooler, as nearly under your bar as possible, and keep it properly cooled.

"Long cellar runs of uninsulated beer lines cause no end of trouble at the faucet. When they are exposed to heat pipes, the trouble multiplies.

"Sharp angles in the lines will agitate the beer as it flows, causing excessive foam at the faucet.

"Be sure the keg tap, rod, and connections are thoroughly clean before inserting the tap rod into the keg. In addition to the tap rod, the entire system should be carefully cleaned out at least once a week. Do not ram the tap rod into the bottom of the keg. Use block tin tubing between tap rod and beer lines, or if you use rubber hosing, be sure it is a good grade of beer hose, not ordinary garden hose.

"Never allow beer lines and coils to stand empty. Always keep beer in them—or when empty of beer, fill them with water.

"The cooling system must keep beer at a constantly uniform temperature, from the first thing in the morning till closing at night, every day.

"If the refrigeration system is right, you'll have no problems with wild, foamy beer—no waste—no unsanitary conditions and stagnant odors around the bar.

"It's easy to waste more beer than is served by not following the few simple rules of drawing a good glass of beer. When the faucet is not completely open, beer becomes agitated and flows wild and foamy. It wastes your time and wastes the beer—topping it off down the drain.

"Never hold the glass far away from the faucet, because the gas will be knocked out of the beer as it hits the glass and will cause foaming.

"Never wash beer glasses in soapy or greasy water. Never dry them with towels used for drying dishes.

"Let the beer glasses have their own sink. Plunge each glass in cold water before drawing beer in it."

200 Zerozone Units Sold For Gebhardt Freezers

DETROIT—More than 200 1-hp. and 2-hp. Zerozone commercial refrigeration machines have been sold thus far this year to the R. D. Gebhardt Co. of Chicago, manufacturer of counter-type ice cream freezers, report officials of the Zerozone Refrigeration Co.

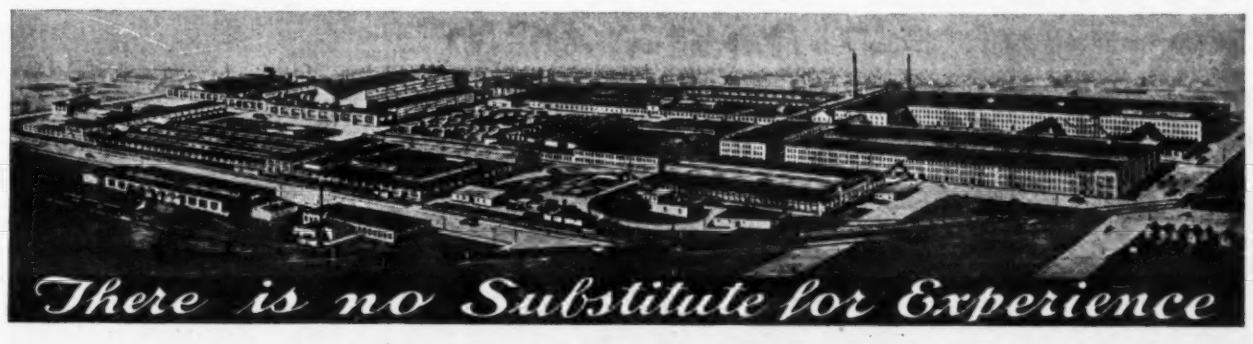
The Zerozone units, especially designed for ice cream freezer work, operate in conjunction with Gebhardt 3 and 5-gal. freezers with 30, 40, or 60-gal. hardening cabinets. The freezers are designed to be self-contained, that is, space is provided for the refrigerating unit.

ACCEPTANCE

Every sale of Servel products pays a double profit to the dealer—his direct profit on the sale, plus a continuous dividend in good will and assistance from satisfied users. These "acceptance dividends" accumulate in his cash account because of continuously decreasing sales costs. Every sale of Servel commercial refrigeration or air conditioning equipment reinforces the dealer's position and leads him to his next prospect with increased confidence and the assurance of a friendly reception.

SERVEL
COMMERCIAL REFRIGERATION
SERVEL, INC. *Commercial Refrigeration Division* EVANSVILLE, IND.

This modern 30-acre plant is the home of Servel Commercial Refrigeration and the world-famous Electrolux, the Servel Gas Refrigerator



SERVICE

Automatic Expansion Valve Design and Operation

Editor's Note: Mr. Newcum's articles constitute a manual of information on present-day refrigeration systems which will add to the service man's knowledge of refrigeration, and which will assist him in meeting specific problems in servicing operations in the field.

The article in this issue discusses the operation of high side float valves with flooded evaporators.

Following is an outline of Mr. Newcum's articles as they have appeared in the NEWS.

April 10 Issue

Chapter 1—THEORY OF REFRIGERATION

This chapter deals with fundamentals of refrigeration. Inasmuch as refrigeration is really a process of the removal of heat from a given space, "these" fundamentals consists mainly of the terms, definitions, and physical laws which are involved when heat is transferred from one substance or space to another location.

April 17 Issue

Chapter 2—PRINCIPLES OF MECHANICAL REFRIGERATION

Three principal parts of the household refrigeration system—cabinet, condensing unit, and evaporator—are described briefly in this chapter, and the operating cycle of a refrigerator is explained in detail. Also published with this chapter is the refrigerant pressure-temperature chart and an explanation of service gauges.

April 24 Issue

Chapter 3—COMMON REFRIGERANTS

Properties which are necessary for a good refrigerant are outlined in this chapter, which also gives a detailed comparison of the physical properties and characteristics of the following refrigerants: sulphur dioxide, methyl chloride, ethyl chloride, ammonia, and Freon..

May 1 Issue

Chapter 4—CONDENSING UNITS
(Instalment 1: description of various compressor parts.)

Design and functions of the following compressor parts are described: compressor body assembly, housing assembly, crankshaft and connecting rod assembly, eccentric shaft and connecting rod assembly, piston and piston valve assembly, and discharge valve assemblies. Service operations on these various compressor parts are outlined.

May 8 Issue

Chapter 4—CONDENSING UNITS
(Instalment 2: stuffing box seals, flywheel, and direct-connected condensing units.)

Different designs of stuffing box seals, operating principles of these seals, and methods of servicing them are explained and illustrated. Flywheels and direct-connected condensing units are also discussed.

May 29 Issue

Chapter 4—CONDENSING UNITS
(Instalment 3: rotary compressors.)

Rotary compressor design, operation, and servicing are described, with Norge and Majestic makes discussed in some detail.

June 5 Issue

Chapter 4—CONDENSING UNITS
(Instalment 4: care and servicing of shut-off valves and gaskets.)

Operation and servicing of the various shut-off valves are outlined in this article, and suggestions given on the care of gaskets.

June 12 Issue

Chapter 4—CONDENSING UNITS
(Instalment 5: condensers.)

Various types of condenser design are described and illustrated, and suggestions made for their care and servicing.

June 19 Issue

Chapter 4—CONDENSING UNITS
(Instalment 6: liquid receivers.)

Described in this instalment are liquid receivers used with air-cooled condensers. Horizontal and vertical receivers for flooded and dry systems are explained.

June 26 Issue

Chapter 5—EVAPORATORS
(Instalment 1: flooded evaporators with low side float valve.)

This article explains the operation of the flooded system with the low side float valve and gives information on service problems that are likely to be met.

July 3 Issue

Chapter 5—EVAPORATORS
(Instalment 2: high side float valves and flooded evaporators.)

Different types of high side float valves and their use in flooded systems are discussed and illustrated in this issue. The article also explains service problems which may be encountered and deals with the liquid temperature valve.

Dry Type Cooling Unit

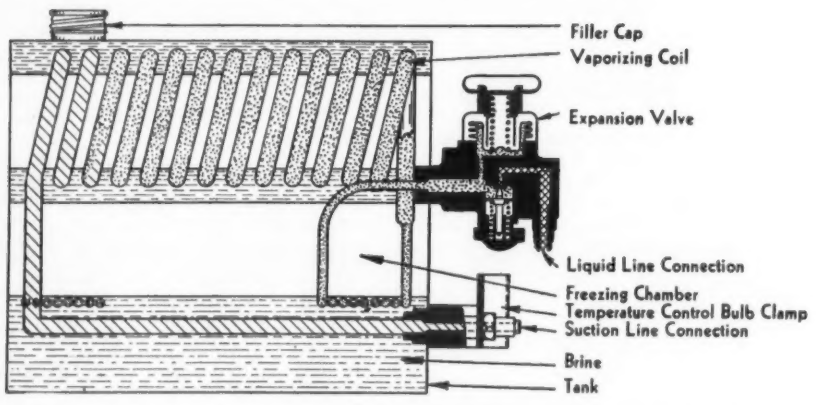


Fig. 98. Typical dry-system type cooling unit for a household electric refrigerator, with various parts named.

How Automatic Valve Operates

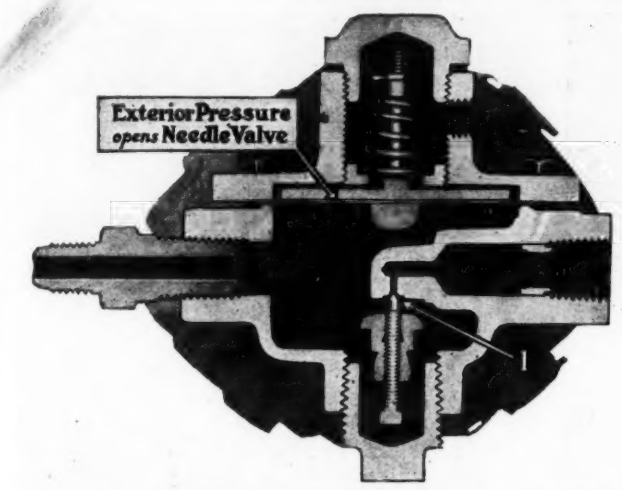


Fig. 100. When the pressure within the regulating valve is reduced to the predetermined setting, the atmospheric pressure on the opposite side of the diaphragm is sufficient to force the needle from the seat and the valve opens slightly, as is illustrated here.

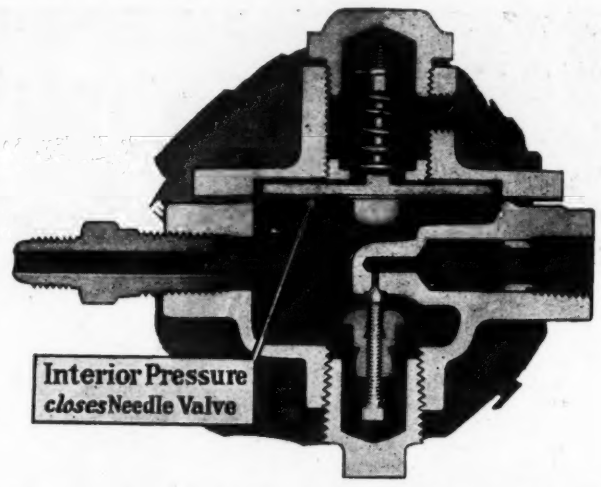


Fig. 101. After the valve opens, as explained by Fig. 100, a small quantity of liquid refrigerants enters the low pressure side, evaporates, builds up pressure inside against the diaphragm, and closes needle valve again, as is depicted in this illustration.

66. Automatic Expansion Valves & Evaporators

Evaporators used with the automatic expansion valve are termed dry expansion evaporators. The action of the automatic expansion valve is such that the evaporator is not flooded with liquid refrigerant, as with the flooded evaporator, because the refrigerant is supplied and contained in the evaporator in the form of dense vapor, known as saturated vapor.

The most common design used in dry expansion evaporators is the continuous tube type such as shown in Fig. 98. The continuous tube is wound around or across the ice cube tray sleeves.

The expansion valve outlet is connected to the inlet end of the evaporator tube, and the suction line is connected to the outlet end.

Adjustment of the expansion valve controls the amount of refrigerant admitted to the evaporator which in turn controls the frost line, or the proportion of the evaporator used.

The automatic expansion valve is an adjustable refrigerant regulating valve, which is actuated by the pressure in the evaporator and the low pressure side of the system.

Automatic expansion valves differ in that some designs employ a flexible metal diaphragm, while others use the bellows to obtain the flexing movement necessary in their operation.

A Frigidaire expansion valve using the diaphragm is shown in Figs. 99, 100, 101. The diaphragm effects a gas-tight seal between the valve body and the cover plate. That part of the valve below the diaphragm is in the refrigerant circuit, and the part above the diaphragm is exposed to the atmosphere.

The diaphragm separates these two pressure areas and is so constructed that it may flex up and down slightly, but sufficiently to provide for the normal movement of the needle yoke to travel up and down as the valve opens and closes.

Above the diaphragm in the cover plate is the adjusting nut and the spring. Below the diaphragm and in the refrigerant circuit is the needle yoke, the needle, and the inlet orifice against which the needle seats.

All this part of the valve is in the low pressure side of the system, as the needle and seat is the dividing line between the two pressure sides of the system.

Liquid refrigerant enters through the inlet connection which houses the strainer screen 6, Fig. 99. The needle yoke is connected to the adjusting screw, through the diaphragm. A gas-tight joint is formed at this point. The outlet connection to the left of the illustration is connected to the evaporator inlet connection.

The spring is compressed between the nut at the top of the screw and the adjusting nut, so that it has a tendency to hold the diaphragm and needle yoke up, and the needle against the seat, or closed.

When the valve is properly installed in the system and the compressor put into operation, the so-called "sucking" action of the compressor reduces the pressure in the valve body below the diaphragm. The pressure on top of the diaphragm, which is the normal constant pressure being exerted by the atmosphere, remains the same.

With the reduced pressure below the diaphragm, the pressure of the atmosphere tends to force the diaphragm downward, compressing the spring and moves the yoke, hence the needle away from the seat, allowing the high pressure liquid refrigerant to rush in (Fig. 100).

It is at this point that the liquid is broken up into the form of a spray of saturated vapor. This saturated vapor now in the evaporator, vaporizes and expands, increasing the pressure sufficiently to force the diaphragm up, momentarily closing the valve.

The compressor continues to draw the expanded vapor from the low side and in doing so again reduces the pressure below the diaphragm, and the valve reopens, admitting a new supply of saturated vapor, and the cycle is repeated.

Action of the valve is automatic, that is, it continues to open and close on a very slight pressure difference throughout the entire operating cycle of the condensing unit.

The operating pressure of the valve may be changed by increasing or decreasing the pressure of the spring. By turning the adjusting nut to the right clockwise the back pressure may be increased, and vice versa.

By increasing the pressure, the amount of saturated vapor is increased, for the valve has the ability to open wider with a slighter difference between the low side pressure and the atmospheric pressure.

A Kelvinator diaphragm type ex-

(*Concluded on Page 13, Column 5*)

Automatic Expansion Valve

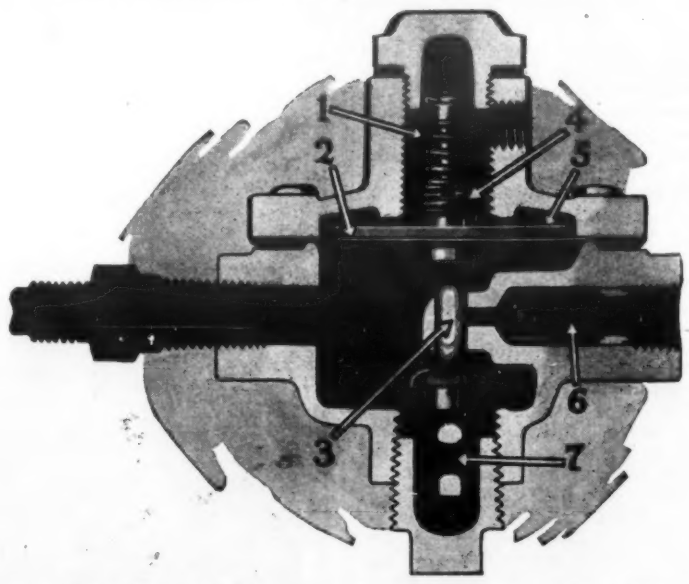
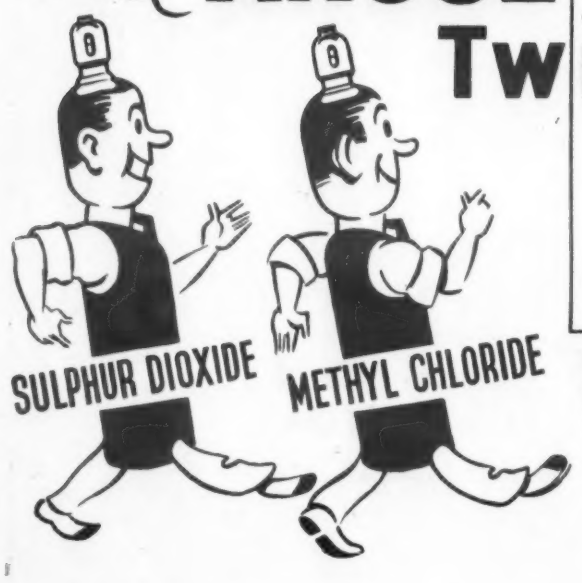


Fig. 99. Frigidaire automatic expansion valve. (1) conical spring; (2) diaphragm; (3) needle yoke; (4) adjusting nut; (5) diaphragm retaining plate; (6) screen; (7) needle.

The ANSUL Twins



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ANSUL SULPHUR DIOXIDE is dry, clean and pure. Every cylinder is individually analyzed before it leaves our plant. Satisfactory refrigeration is guaranteed.

ANSUL METHYL CHLORIDE is of low moisture and acid content. The individual analysis of every cylinder is your assurance of refrigeration satisfaction.

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SERVICE OPERATIONS

A SERIES OF LESSONS OUTLINED FOR THE USE OF THE SERVICE MANAGER IN INSTRUCTING BEGINNERS IN SERVICE WORK

No. 13—Adding SO-2 to Low Side Of Any Make

By K. M. Newcum

REASON:

If a system is found to be short of sulphur dioxide refrigerant, it is proof that there is a leak somewhere in the system. It is most likely that the leak will be found on the high pressure side of the system, as the low side is ordinarily working in a vacuum and would have a tendency to take in air rather than leak SO_2. Nevertheless, check all joints and connections on both the high and low sides with ammonia to locate the leak and make the repair before charging the job. A shortage of SO_2 in the flooded system will be indicated by a noticeable hissing or boiling noise in the evaporator, low operating head pressure, and a warm liquid line. A shortage on the direct expansion job will be observed by a steady low sizzling noise at the expansion valve, low head pressure, and a warm liquid line. A shortage in either type of system will result in little or no refrigeration.

PROCEDURE:

A. Attach the combination gauge set. Purge and test connections for leaks.

B. Make a note of the operating head pressure and back pressure before making any other changes. Take the temperature of the air passing the condensing coils. (If water cooled, take the inlet water temperature.)

C. Place SO_2 container in an *upright position*, secured against some solid object, so that it will not fall over and break the connecting line. Weigh the container and make a note of the gross weight.

D. Connect SO_2 drum to service connection on gauge set. Purge connecting or charging line and test for leaks.

E. Open the service valve on the SO_2 drum at least two or three turns.

F. Put compressor into operation.

G. Open slightly the valve into which the compound gauge is screwed on the combination gauge set, allowing SO_2 to pass through the valve into the suction side of the compressor.

H. Close the suction shut-off valve on the compressor all the way to the right and open the service valve on the gauge set sufficiently to keep the back pressure (compound gauge) reading at around 5 lbs. pressure. Use the service valve as a throttle valve to regulate the amount of gas that is being admitted to the compressor. If more than 1 lb. is to be admitted, the drum should thus be placed in a bucket of warm water to keep it warm. If this is not done, the container will become cold and will not release sufficient vapor to keep the back pressure around 5 lbs.

I. Keep a very close check on the pressure gauge. As SO_2 is being added, the head pressure should rise. Never add over 1 lb. at a time. It can be safely said that any ordinary household refrigeration machine will pump about 1 lb. of SO_2 every 10 minutes if the back pressure is maintained at around 5 lbs.

J. After the compressor has pumped for 10 minutes, stop the machine, close the service valve on the gauge set, open the suction line shut-off valve on the compressor to its normal operating position.

K. Put the machine into operation and check the pressures, listen for the hissing noise at the evaporator or expansion valve, and note the temperature of the liquid line. If the hissing noise has stopped, the pressures are normal, the unit begins to frost up, and the liquid line is around normal temperature sufficient SO_2 has been added. If the hissing continues, repeat the above procedure until sufficient SO_2 has been added.

L. Close the service valve on the SO_2 drum. Open the service valve on the combination gauge set, letting the compressor pump the liquid out of the charging line. Close the service valve on the gauge set (pressure), and disconnect the charging line and drum.

M. Check the operation of the job with the instructor.

Automatic Expansion Valve Operation

(*Concluded from Page 12, Column 5*)

pansion valve is illustrated in Fig. 102. The function of the valve is the same as the Frigidaire valve. The design is slightly different.

Liquid refrigerant enters through the inlet fitting and screen 2 and 3, travels through the opening in the valve spring plug 6, and then through grooves provided in the valve guide 9 then up to the needle and seat. As the pressure is reduced in the low pressure side of the diaphragm, the pressure of the atmosphere and the adjusting spring overcomes the pressure of the valve spring 8, allowing the diaphragm to move inwardly.

As the buffer plate 18 is in contact with the valve needle 13, the needle is forced away from the seat, allowing the liquid refrigerant to enter the low side of the system through this opening.

The resulting increase in low side pressure forces the diaphragm back to its original position and the valve spring 8 moves the needle back up against the seat to close the valve. As the cycle is repeated at frequent intervals, a constant back pressure is maintained while the compressor is in operation.

A Detroit Lubricator automatic expansion valve is shown in Fig. 103. This valve employs the flexible metal bellows to accomplish the necessary travel at the needle.

The liquid refrigerant enters through the screen strainer F up to the seat M and needle L.

As the pressure in the evaporator and expansion valve is reduced by the compressor, the atmospheric pressure in the area housing the adjusting spring C remains constant, tending to compress the bellows, which by its connection with the yoke and needle, forces the needle away from the seat, admitting refrigerant through this opening.

The resulting increase in pressure in the valve body responds on the bellows, causing it to elongate, moving the needle and yoke assembly and drawing the needle back to the seat, to close the valve.

As is the case with most expansion valves the back pressure may be increased by turning the adjusting screw to the right or clockwise.

The Fedders automatic expansion valve is shown in Fig. 104. Kelvinator bellows type valve is shown in Fig. 105. Note the difference in design and construction of the several valves of different manufacture. The function and purpose of the several types is the same, although the mechanical principles may be somewhat different.

Girl Scouts Trained in Model G-E Kitchen

ST. LOUIS—"New type of cooking school activity" is a six weeks' home appliance course for girl scouts which is being conducted by the General Electric department of Stix, Baer & Fuller, local department store.

Miss Helen Widick and Miss Wilma Georg, home economists for James & Co., Inc., St. Louis G-E distributor, are in charge of the course.

Twenty girls, selected from each of the various girl scouts' troops, were given a four-week course.

Three weeks of practical work on meal planning and preparation, followed by a practical examination, concluded the course. Successful students received Girl Scout Cook badges.

Merchant Manual Shows Results of Survey

DETROIT—Just issued by Norge Corp. is a 110-page Merchant Training Manual, containing a series of 68 charts in four colors, graphing the salient findings of Norge's marketing study among 23,000 consumers, 25,000 Norge users, 1,500 general appliance dealers, 6,000 Norge dealers, 8,000 Norge salesmen, 400 Norge wholesalers, and 400 department stores.

The manual has 12 chapters, dealing with such subjects as what makes a good Norge merchant, methods of enlisting salesmen, sales training and meeting procedure, window displays, store planning, mass selling, outside selling, advertising and publicity procedure, consumer finance, the use of sales promotion materials, and traffic-pulling stunts and contests.

Norge dealers are being furnished with a copy of the manual at no cost, in order to further the company's policy of a standard selling activity.

51 Liftops Are Installed In Detroit Hotel

DETROIT—Fifty-one General Electric "Liftop" model refrigerators have been installed in the Wilcrest hotel apartments here. Harry Barsky, owner, has placed an order with Caswell, Inc., Detroit G-E distributor, for 34 additional models and will also install several more in other buildings.

Diaphragm Type Expansion Valve

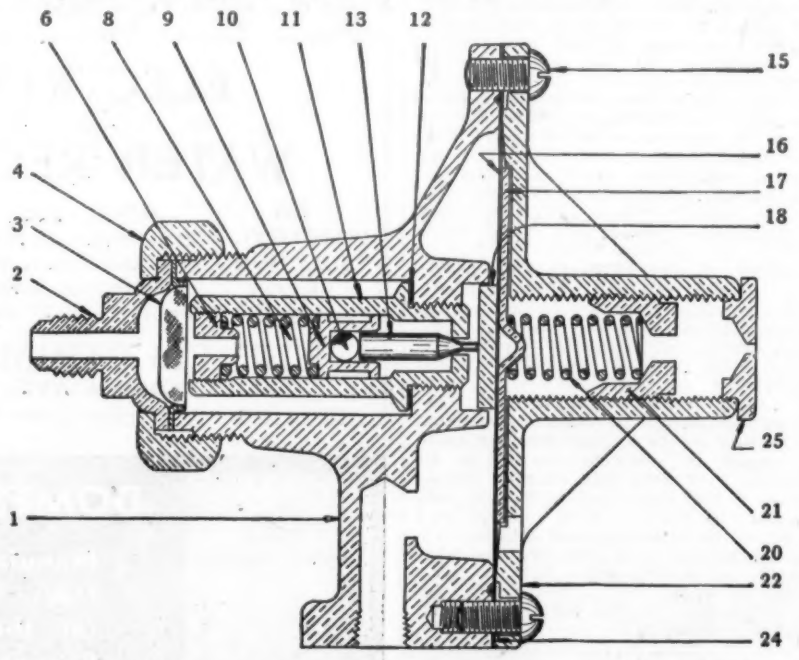

Fig. 102. Kelvinator diaphragm-type expansion valve. (1) body; (2) inlet fitting; (3) strainer; (4) inlet fitting nut; (6) valve spring plug; (8) valve spring; (9) valve guide; (10 valve thrust ball; (11) valve seat; (12) valve seat gasket; (13) valve; (15) cover screw; (16) diaphragm; (17) adjusting spring buffer plate; (18) valve buffer plate; (20 adjusting spring; (21 adjusting screw; (22) cover; (24) cover gasket; (25) cover plug.

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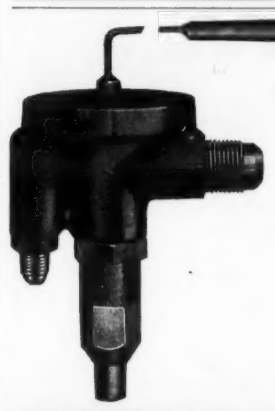

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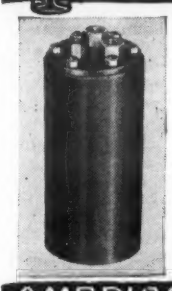

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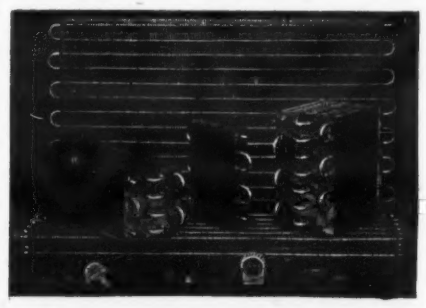

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INSTALLATION OPERATIONS

A SERIES OF LESSONS OUTLINED FOR THE USE OF THE SERVICE MANAGER IN INSTRUCTING BEGINNERS IN INSTALLATION WORK

No. 13.—Installing Evaporator in a Regular Refrigerator Cabinet

By K. M. Newcum

TOOLS NEEDED:

Rule and two small adjustable wrenches.

MATERIALS NEEDED:

The evaporator and hanger assembly.

PROCEDURE:

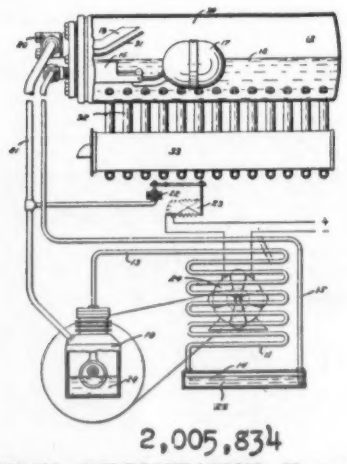
1. Measure the distances between the hanger bolts and check against the bolt hole centers on the hanger assembly.
2. Install the hanger assembly on the evaporator loosely.
3. Install the hanger assembly and evaporator onto the hanger bolts and tighten into place.
4. Check evaporator with spirit level and make adjustment on hanger bolts and evaporator to assure level evaporator.
5. Evaporator must be solid and level and in such a manner, or position, that the refrigerant tubes and fittings are accessible.
6. Check with instructor.

PATENTS

Issued June 25, 1935

2,005,769. SYSTEM FOR AIR CONDITIONING RAILROAD CARS. Herman Richard Arf, Elizabeth, N. J., assignor, by mesne assignments, to Carrier Engineering Corp., Newark, N. J., a corporation of New York. Application Nov. 29, 1929. Serial No. 410,360. 5 Claims. (Cl. 98—14.)

1. In an air conditioning system for a railroad car having a monitor top and crowned shoulder portions, a plenum space extending substantially the length of the car, said plenum space being formed between a false ceiling and the roof of said car, said ceiling extending across the car from one crowned shoulder to the other air conditioning apparatus, a conduit wholly within said plenum for supplying conditioned air from said apparatus to a plurality of air outlets in said false ceiling, the remainder of said plenum serving as a passageway for returning air from the car to said conditioning apparatus.



2,005,834

2,005,834. REFRIGERATION. Harry M. Williams, Dayton, Ohio, assignor, by mesne assignments, to General Motors Corp., a corporation of Delaware. Application Nov. 30, 1931. Serial No. 577,940. 5 Claims. (Cl. 62—126.)

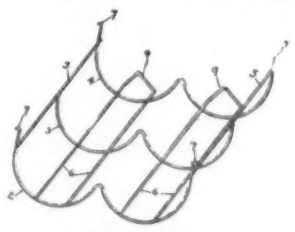
5. A refrigerating system comprising a compressor, condenser and evaporator in refrigerant-lubricant circulating relationship, said evaporator being provided with a liquid refrigerant inlet having a control automatically responsive to the liquid level in said evaporator and having a gaseous refrigerant outlet above the level of liquid refrigerant in said evaporator, said outlet having no connection below the liquid level, said system being charged with a refrigerant and a lubricant completely miscible with each other in the liquid phase at the normal evaporator operating temperatures.

2,005,860. COOLING SYSTEM. Victor C. Huntington, Blue Island, Ill., assignor to Wepsco Steel Products Co., Blue Island, Ill., a corporation of Illinois. Application Oct. 20, 1933. Serial No. 694,389. 13 Claims. (Cl. 62—116.)

1. In a refrigerating system, a storage chamber, a heat-absorbing device in said chamber, a beverage cooler comprising a cooling coil, said cooler having a brine therein adapted to solidify about the cooling coil, means for supplying a refrigerant to said heat-absorbing means and thence to said cooling coil, means controlled by the temperature of the storage chamber to bypass the refrigerant directly to the cooling coil, and means responsive to a predetermined amount of solidification of the brine for stopping operation of the refrigerant supplying means.

2,005,939. REFRIGERATOR RACK. Charles L. Hibbard, Jr., Brookline, Mass., assignor to Old Colony Distributing Co., Inc., Boston, Mass., a corporation of Massachusetts. Application May 13, 1933. Serial No. 670,853. 3 Claims. (Cl. 211—74.)

1. A rack adapted to be suspended from a refrigerator shelf and comprising a support having crossed wires secured



2,005,939

together, some of said wires cooperating with others extending transversely to them to form a plurality of separate pockets each adapted to receive and hold a bottle in a reclining position, said pockets lying side by side parallel to each other and having a dividing means between them to hold adjacent bottles separated from each other, and arms extending upwardly from said support and provided with hook portions at their upper ends for engaging said shelf and suspending the rack therefrom.

2,005,959. REFRIGERANT COMPRESSOR. Lawrence C. Smith, Kenmore, N. Y., assignor to Fedders Mfg. Co., Inc., Buffalo, N. Y. Application May 10, 1933. Serial No. 670,313. 4 Claims. (Cl. 230—172.)

1. In a refrigerant compressor the combination of a cylinder block, a crankcase, a head for the cylinder block formed with input and output ports, a valve on each port, an input chamber formed in the head and communicating with said input port, an oil passage formed in the block and connecting the input chamber to the crankcase, and a baffle in the input chamber disposed about the input port to prevent oil entry therein.

2,006,046. SHUTTER TYPE PARTITION FOR REFRIGERATORS. Norman C. Huckestein, Pittsburgh, Pa. Application May 2, 1932. Serial No. 608,588. 1 Claim. (Cl. 62—47.)

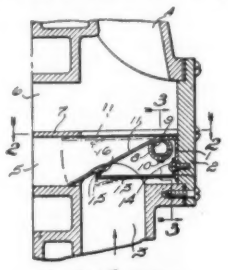
In a refrigerator, a food storage chamber, a partition dividing said chamber into upper and lower compartments, said partition consisting of a perforated shelf insulated from the walls of said chamber to make an air tight joint with said wall, a freezing unit in the upper compartment and a shutter for opening and closing the perforations of the partition, said shutter when closed providing circulation of the cooling medium in the upper compartment only and, when opened, providing circulation of the cooling medium in both compartments.

2,006,069. AIR CIRCULATING APPARATUS. Fred J. Day, Los Angeles, Calif. Application April 24, 1933. Serial No. 667,644. 3 Claims. (Cl. 98—7.)

1. In a refrigerator car, an air circulating unit comprising a casing having a fan therein, means to support said unit on the wall of the ice bunker of said car to direct the upper portion of the air current from said fan longitudinally of said car, there being an air space immediately below said unit and adjacent to the wall of the ice bunker, and a series of vertically arranged adjustable air deflector plates carried by the front portion of said unit, said deflector plates being located between the bunker wall and the central portion of the car, the lowest plate of said series having its lower portion inclined rearwardly toward the bunker wall and being adjustable to a position wherein it directs backwardly under said unit and diagonally against said wall the lower portion of the air current from said fan.

2,006,153. THERMOSTATIC VALVE. Herbert B. Trix, Grosse Pointe Village, Mich., assignor to American Injector Co., Detroit, Mich., a corporation of Michigan. Application Sept. 30, 1933. Serial No. 691,719. 6 Claims. (Cl. 236—34.)

1. In a thermostatic valve, a bracket, a valve member pivotally mounted on the bracket and provided with a depending



2,006,153

lug, the valve member being arranged to fall by gravity to the closed position, a bimetallic arm having an end normally engaging the lug of the valve member to hold the valve member in the closed position, the bimetallic arm being arranged to release the valve member upon reaching a pre-determined temperature and a helical thermostat arranged to turn the valve member on its pivot under temperature variation.

2,006,298. ROTARY PUMP, COMPRESSOR, ENGINE, AND THE LIKE. Miller R. Hutchison, Jr., Madison, N. J., assignor to Multicycol Pump & Engine Corp., New York, N. Y., a corporation of New York. Application April 21, 1933. Serial No. 667,140. 11 Claims. (Cl. 103—124.)

1. A machine of the character disclosed, comprising a lobed impeller, hollow faced rockers having their opposite sides in sealing engagement with said lobed impeller and provided with passages through from back to front of the same, a housing enclosing said impeller and rockers and providing with the impeller and rockers a variable displacement chamber for each rocker and variable displacement chambers between the rockers, said housing having admission and exhaust valve ports at opposite sides of the rockers and valving elements on the rockers and cooperatively related to said ports to alternately place the same in communication with the rocker chambers and with said chambers between the rockers.

2,006,299. HEAT INTERCHANGE APPARATUS. Robert E. Kaestner, Baltimore, Md., assignor to E. A. Kaestner Co., a corporation of Maryland. Application July 30, 1934. Serial No. 737,658. 3 Claims. (Cl. 257—108.)

2. In a heat-interchange apparatus, an inner vessel, an outer vessel surrounding said inner vessel in spaced relation both laterally and at the bottom to said inner vessel and forming a tight jacket for said inner vessel, a plurality of hollow coils including coils having a plurality of convolutions, a manifold disposed between said vessels and in spaced relation to said inner vessel for supplying heat-exchange fluid to said coils, a manifold disposed between said vessels and in spaced relation to said inner vessel for receiving the fluid after passage through said coils, a perforated steam pipe extending into the space between said vessels, the convolutions of said coils being in direct contact with each other and with said inner vessel, means comprising heat-conducting material in the interstices between the adjacent convolutions of said coils and said inner vessel and forming a direct and voidless heat-transfer structure between the contents of said coils and the contents of said inner vessel, and agitation means within said inner vessel.

2,006,306. APPARATUS AND METHOD FOR TEMPERATURE REGULATION. Daniel D. Wile, Detroit, Mich., assignor to Detroit Lubricator Co., Detroit, Mich., a corporation of Michigan. Application May 22, 1930. Serial No. 454,548. 35 Claims. (Cl. 236—1.)

1. An apparatus of the character described comprising a chamber, regulatable heating means in said chamber, cooling means in said chamber acting to withdraw heat from said chamber simultaneously with the supply of heat to said chamber by said heating means, and means to regulate the heat supplied by said heating means in predetermined relation to the rate at which heat is withdrawn by said cooling means whereby the temperature of said chamber may be accurately controlled.

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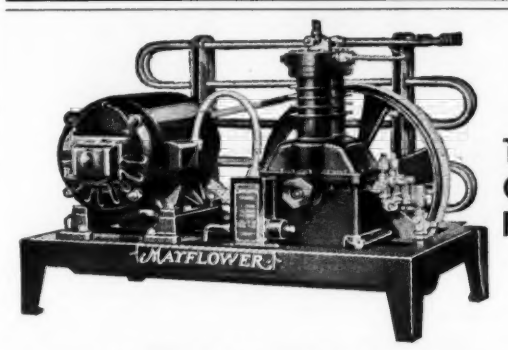

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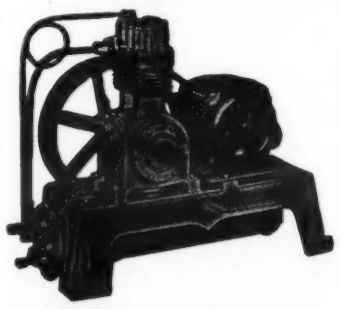

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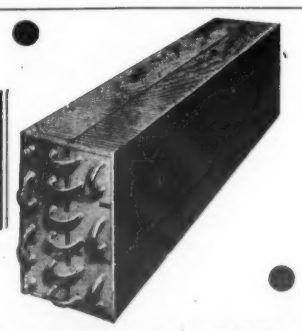

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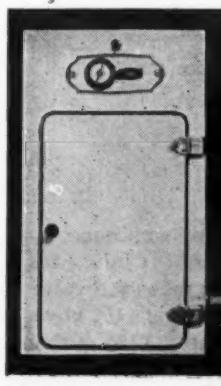

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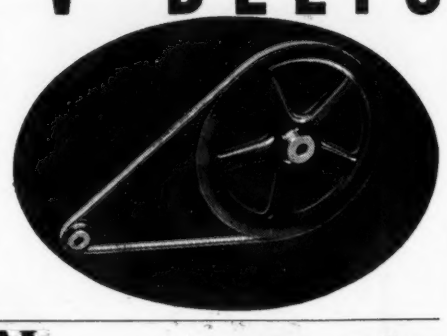

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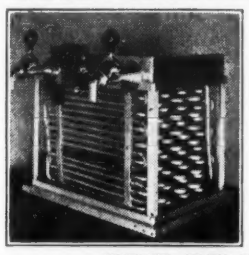

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7-10-35

QUESTIONS

New York Service Men

No. 2331 (Manufacturer, New York)—"I am writing to inquire if you can furnish us with a list of electrical refrigeration service men in western New York State."

Answer: Service companies in New York State of whom we have a record are listed on pages 368 and 369 of the 1935 Refrigeration and Air Conditioning Directory.

Refrigerants

No. 2332 (Dealer, Iowa)—"Enclosed find 10 cents for which please send us the following: We are not sure which issue it is, but think it is March 16 or 18. It has information regarding the chemicals contained in the different makes of refrigerators."

Answer: Specifications of household electric refrigerators, including information regarding the chemicals contained in the various makes, were published in the March 20 issue of Electric Refrigeration News. As our stock of this issue was exhausted, the specifications were revised and again published in the June 12 issue.

Farrow Evaporators

No. 2333 (Manufacturer, Indiana)—"One of our customers wants us to give him information on Farrow evaporators for household boxes. I don't find this in the Directory and wonder if you have any information on who makes them."

Answer: We do not know of this company. Perhaps he means Fedders Mfg. Co., Buffalo, N. Y.

Air Conditioner Makers

No. 2334 (Manufacturer, Arkansas)—"We are advised by the Department of Commerce that your publication, Electric Refrigeration News publishes a list of manufacturers of air-conditioning apparatus, and we desire to secure a copy showing the manufacturers of air-conditioning apparatus."

Answer: Specifications of air-conditioning equipment made by leading manufacturers were published in the May 22, 1935 issue of Electric Refrigeration News. Copies of this issue may be obtained for 10 cents each.

For complete list of manufacturers for various types of air-conditioning systems see the 1935 Refrigeration and Air Conditioning Directory which lists all manufacturers of refrigerating and air-conditioning equipment.

Compressor Ratings

No. 2335 (Dealer, Indiana)—"As a subscriber of your paper, please advise me the number of pounds of melting ice equivalent that a 7-cu. ft. full porcelain Super Frigidaire produces in 24 hours; the number of pounds melting ice equivalent the Master model 8-cu. ft. Frigidaire produces. Also, the number of pounds melting ice equivalent the General Electric 7-cu. ft. non-porcelain outside finish job produces."

Answer: Specifications of 281 models of household electric refrigerators are given in the June 12 issue of Electric Refrigeration News. Ice melting effect (I.M.E. lbs.) is given for all Frigidaire and General Electric models on page 10 of that issue.

Commercial Sales Figures

No. 2336 (Marketing and Research Bureau, Illinois)—"We have a request from a manufacturer of electric motors and fans, asking us to furnish them with the number and value in dollars of commercial and industrial refrigerators sold since 1920. We are wondering if you have such information available, and if so, would you be kind enough to forward these figures to us? If you are unable to furnish this information, perhaps you can tell us where it may be obtained."

Answer: Included in the 1935 Refrigeration and Air Conditioning Market Data Book is a record of the number of commercial refrigerating machines sold in each year since 1923 and also a chart showing sales of industrial refrigerating machines in each year since 1900. Dollar sales are not available for the above equipment.

Porcelain Cabinets

No. 2337 (Manufacturer, New York) "We shall appreciate your furnishing us with names and addresses of manufacturers who make the porcelain boxes for the household refrigeration manufacturers.

"Please understand we are not interested in the high sides or units, only in boxes."

Answer: Manufacturers of household electric refrigerator cabinets are listed on page 226 of the 1935 Refrigeration and Air Conditioning Directory.

Parts for Rice Unit

No. 2338 (Dealer, Nebraska)—"Please inform us where we can purchase parts for a Rice refrigeration compressor, manufactured by the Rice Products Co. of Detroit?"

Answer: Replacement parts for Rice compressors can be obtained from Rex Cooling Industries, Inc., 291 Adams St., Brooklyn, N. Y.

Agreement on Prices

No. 2339 (Advertising Firm, Illinois)—"In an issue of your magazine appearing some months ago, you gave some details about the agreement among refrigeration companies and distributors on the matter of prizes and their limitations. We are wondering if you can refer us to that article or anything that you have that might disclose what these limitations are. Thus far we have been unable to find material on that subject in the copies of your publication that we have in our library."

Answer: The only article which we have published recently dealing with this subject is the one on page 1 of the January 16 issue, which told about an agreement on prize contests entered into by Kansas City distributors.

Market for Humidifiers

No. 2340 (Agency, New York)—"It occurred to us that you would very likely have data in your files on the U. S. market for humidifiers."

Answer: The Real Property Inventory made by the U. S. Government in 1934 covering 64 cities showed that of 2,633,135 dwellings surveyed, 31 per cent used warm-air heating systems. If this proportion holds true for the country as a whole, about 9,270,000 of the 29,904,663 homes shown in the 1930 Census would be so equipped. This would indicate the *possible* market for home humidifying systems operating in connection with the heating plant.

Complete information showing warm-air heating systems in each city was published in Electric Refrigeration News issues as follows: May 23, 1934, June 20, 1934, July 11, 1934, October 10, 1934, and January 2, 1935.

Estimates as of December 31, 1934 indicate that there were 20,693,984 wired homes in the U. S. which should indicate the potential market for electric motor driven humidifiers. Wired homes by states are contained in the 1935 Refrigeration and Air Conditioning Market Data Book. These figures should give you an idea of the market for electrically operated humidifiers in each state.

Dehydrating Agents

No. 2341 (Supplier, Massachusetts)—"We would appreciate learning whether or not you have had experience and would care to offer advice as to the use of White Rock Lime for dehydrating agents in gas electric refrigeration units in place of calcium oxide."

Answer: An article dealing with dehydrating agents was published on page 21 of the March 6 issue of Electric Refrigeration News.

Water Temperatures

No. 2342 (Dealer, California)—"Have there ever been any bulletins issued by the government or any prominent medical institution in regard to the proper temperatures for drinking water or the harmful effect of water that is too cold?"

Answer: We do not know of any such government bulletin, but a comprehensive article on this subject was published on pages 8 and 9 of the July 18, 1934 issue of Electric Refrigeration News.

Service Chart

No. 2343 (Engineer, Minnesota)—"The writer saw a copy of your Refrigeration News printed about May, 1934, wherein you gave a chart showing how to find the remedy for certain difficulties a person could have with an electric refrigerator after the cause of the difficulty was known. This covers the entire page of this issue."

Answer: The chart to which you refer was published on page 11 of the Aug. 22, 1934, issue of Electric Refrigeration News.

Reclaiming SO-2

No. 2344 (Supplier, New York)—"Our engineer, who is now travelling in Europe, suggests that we ask you to send us a back number of Electric Refrigeration News issued around 1932-1933, and containing an article written possibly by a Mr. Quinn or Quane of the Detroit Creamery people, giving information on an ideal setup for dehydrating or reclaiming sulphur dioxide."

Answer: This article was published on pages one and two of the engineering section of the April 20, 1932 issue of Electric Refrigeration News.

CLASSIFIED

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REBUILT Mayson expansion valves, $1.00. Rebuilt American Radiator expansion valves, $1.65. Ranco controls, all types, $1.95. Frigidaire and Kelvinator dry and flooded coils, $1.50 up. Rebuilt domestic and commercial units, $12.50 up; all sizes from ⅛ HP to 1½ HP; thoroughly rebuilt, fully reconditioned. Federal Refrigerator Corp., 437 11th Ave., New York.

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HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. Van Deventer (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

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